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A SURVEY AND HISTORY OF THE CONSERVATION OF THE OPUS VERMICULATUM MOSAICS OF POMPEII

By

KEVIN A. WOHLGEMUTH

A Thesis submitted to the
Department of Classics
in partial fulfillment of the
requirements for the degree of
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ABSTRACT

This thesis examines the current state of preservation of the 37 opus vermiculatum mosaics found at Pompeii by exploring the history of their excavation, conservation, and preservation. The intriguing dichotomy of the architectural and artistic aspects of the mosaics has added obstacles to their successful treatment and protection. Each event in the lives of the mosaics has affected their preservation, including their production and use in the 1st century B.C.E., their burial resulting from the eruption of Mt. Vesuvius in 79 C.E., and every action performed on the mosaics since their rediscovery between 1759 and 1931. The fates of the opus vermiculatum mosaics have been determined by the history and development of excavation, conservation, and preservation techniques at Pompeii. Ten of the mosaics are still in situ, 25 have been moved to the National Archaeological Museum of Naples, one has been lost, and one has completely deteriorated. Since the early excavations, the development of mosaic conservation associations and more effective theories and techniques have allowed for greater protection of ancient mosaics. In order to protect both the physical and contextual integrity of Pompeii's opus vermiculatum mosaics, a balance must be found between the preservation of the site's distinct archaeological heritage and necessary intervention procedures. Through the study of history, ideology, and technology, this thesis suggests where this balance may be found. Since the analysis is contingent upon the documentation of these events, this study also features a catalog of the mosaics which, in documenting the available information regarding their treatment history, allows for further study and should ensure that the mistakes of past treatments will not be repeated.

CHAPTER 1

INTRODUCTION

This study is designed to examine the current state of preservation of the 37 opus vermiculatum mosaics discovered in Pompeii between 1759 and the present. The history and development of excavation, conservation, and preservation techniques at Pompeii, as well as the inherent architectural and artistic dichotomy of the mosaics have provided obstacles for their successful preservation. These obstacles are closely tied to the ideologies of the archaeologists who served as director of excavations at Pompeii when the mosaics were discovered. Increased recognition of the mosaics' social and cultural context and knowledge concerning the physical nature of the mosaics and their surrounding architectural ruins has allowed for the implementation of some of the more recently developed conservation and preservation theories and techniques. The 25 opus vermiculatum mosaics that have been detached and placed in the National Archaeological Museum of Naples (National Museum) serve as examples of former practices. As Abraham Lincoln once pointed out, "The dogmas of our quiet past are inadequate for the stormy present. As our case is new, so we must think anew and act anew."[1] In this vein, the traditional methodologies that were deemed appropriate for the protection of the mosaics in the 18th, 19th, and parts of the 20th century are not effective in the face of new, devastating elements such as pollution and mass tourism. By studying newer theories and methodologies, I intend to search for a solution that balances the mosaics' need for both the preservation of their physical integrity and their broader context, which is established by keeping them in situ.

One of the most critical problems with the analysis of conservation and preservation of these mosaics is the dependence on and severe lack of published documentation of previous treatments. Therefore, this study will also feature a catalog of the 37 mosaics which will include the available documentation concerning prior excavation, conservation, and preservation procedures. The catalog has a greater benefit for the opus vermiculatum mosaics which remain in situ because they are in more danger of further deterioration than those under constant supervision in the climate-controlled National Museum. For this reason, the catalog will be

[1] Basler, R., ed. 1953. "Annual Message to Congress, 1 December 1862." In *Collected Works of Abraham Lincoln*, Vol. 5. New Brunswick, N.J.: Rutgers University Press.

divided into three sections: the mosaics that remain in situ, those that have been removed to the museum, and the two mosaics which have been lost from the archaeological record. All of the mosaics are vital for the accurate interpretation of their overall context and collecting them in one study will assist further surveys of their importance to the cultural and historical fabric of Pompeii as well as their role in the development of modern conservation and preservation ideology and methodology.

The exceptional state of preservation of the ancient Roman city of Pompeii is due to its burial under layers of ash and pumice caused by the 79 C.E. eruption of Mt. Vesuvius. Ironically, this also saved much of the art and architecture and as a result, Pompeii has been the subject of many excavations and studies since its rediscovery in the 18th century. This archaeological phenomenon provides invaluable information to archaeologists and historians, but its excavation has also created many conservation and preservation issues that the archaeologists probably did not consider. The excavation of Pompeii exposed the artifacts and architectural remains, which had been protected by the layers of volcanic ash. This affected all of the Pompeian structures and artifacts and, in particular, "left many mosaics exposed to the elements in a way never intended, and the result has been their deterioration."[2] According to various microclimate and biodeterioration studies, specifically a 2003 study of tessellated mosaics at Piazza Armerina, "most of the mosaic deterioration occurs from exposure to the open air and from changes in the level of the water table in the subsoil."[3] Also, due to the major earthquake that hit Pompeii in 62 C.E., many mosaics may have been already damaged at the time of the eruption. This damage may have exposed the construction layers of the mosaics which, because of their composite structure, and through the damaging effects of undesired plant growth, are more susceptible to deterioration than the stone tesserae that compose the upper, visible layer. These natural problems have escalated due to the carelessness of the early excavations and increasing amount of tourist traffic. The preservation of the mosaics, and indeed the entire site of Pompeii, is imperative for its complete understanding, and thus archaeologists and the Soprintendenza archeologica di Pompei (SAP)[4] should make preservation one of their top

[2] Roby 2002, 21.
[3] Not 2004a, 433.
[4] The Soprintendenza archeologica di Pompei, a section of the Ministero per i Beni e le Attività Culturali, supervises the excavations at Pompeii and the surrounding region.

priorities. However, based on the insufficient in situ preservation efforts available through contemporary mosaic conservation methodology, it seems that the preservation and protection of the mosaics is not a central concern.

The mosaics are particularly important to archaeologists and historians because they offer insights into many different aspects of Pompeian society and culture. They show the artistic taste of elite Pompeian homeowners in the 1st century B.C.E.[5] and a mastery of a paving technique that exploits space and turns functional pavements into works of art. Without proper conservation and preservation, they could be virtually lost from the archaeological and historical record. Several of the opus vermiculatum mosaics from Pompeii have already been lost in this sense, the details of which will be discussed further in chapter 4.

The loss of mosaic pavements through deterioration or incompetent preservation has been a frequent concern for archaeological sites. A study done in 1971 by Claude Bassier says that "of 660 pavements found in France and published by archaeologists, at least 92 percent were abandoned, destroyed, or lost. The remaining ones—when the subjects were figurative and considered valuable—were, according to the traditional techniques of the time, systematically removed from archaeological sites. Some were re-laid on concrete slabs, while others were abandoned in storage, where many remain today."[6] And by Peter Johnson's estimation, of the approximately 1100 known Roman mosaics in Britain, "about 75% are 'lost,' 10% are known for certain to have been reburied, about 5% are kept in permanent store, while only about 8% are on public display."[7] Bassier's statistics suggest that only the most decorative mosaic have been preserved, and the same situation can be implied for Johnson's study, although it is not specifically mentioned. While this study only concentrates on the preservation of opus vermiculatum mosaics at Pompeii, it is likely that similar statistics can be applied to the site. The 37 opus vermiculatum mosaics comprise only approximately 2% of the total pavements and approximately 3% of all mosaic pavements at Pompeii (fig. 1.1),[8] yet are the most represented

[5] According to several sources (Clarke 1991, 40; Wallace-Hadrill 1994, 160-164; de Vos 1984, 162), the opus vermiculatum mosaics belong to the latest phase of the First and Second Pompeian Style (100-20 B.C.E.). This is based on the chronology of the wall paintings in the rooms containing the mosaics.
[6] de Guichen and Nardi 2006, 5.
[7] Johnson 1980, 10.
[8] The total number of pavements was derived from Bragantini 1992 and includes beaten earth floors, cocciopesto and lavapesta pavements, as well as the opus sectile, opus signinum (using both cocciopesto and lavapesta as the cement base), opus tessellatum, and opus vermiculatum mosaic types.

mosaic type in the National Museum because of their superior aesthetic qualities. Although no study has examined the state of preservation of the other mosaic types at Pompeii, it is likely that such a study would show that the less detailed opus sectile, opus signinum and opus tessellatum pavements are preserved even less effectively than the opus vermiculatum mosaics. These other types of mosaics have, for the most part, been left in situ, often without any protective treatments.[9] The amount of information that could have been obtained from lost mosaics is considerable and at a site with a context as reliable as Pompeii's, the loss of mosaics, wall paintings, and other archaeological remains due to a lack of preservation could lead to a deficit of information that seriously hinders the pursuit of a comprehensive understanding of the site.

According to J.J. Winckelmann, in his *Critical Account*, "By these discoveries we are introduced, as it were, into the age in which the ancient Romans flourished; and enter more minutely into their public and domestic life…and [these works] are worthy of being transmitted as models to be carefully studied by the artists of all future ages, wherever there is a desire of carrying the arts to the utmost perfection."[10] Winckelmann's hyperbole aside, the group of 37 opus vermiculatum mosaics from Pompeii is a particularly worthy sample for a study such as this because of their art historical and inherent aesthetic value as well as their ability to append our knowledge of cultural, societal, and mythological history at Pompeii. Winckelmann's observations also hint at the need for preservation of the archaeological remains, long before it was actually employed at Pompeii.

By definition, opus vermiculatum is a mosaic technique which incorporates polychrome, stone tesserae that are mostly no larger than 4 millimeters across.[11] The name of the style comes from the Latin *vermiculatus* which is the perception that the lines of the tesserae create a wavy or worm-like effect. There are only two ancient, extant sources that specifically discussed the use of opus vermiculatum mosaics, although not in the context of Pompeii. Pliny mentioned it briefly in his *Natural History*, in which he discussed marble wall mosaics, noting that, "not only so that every wall is decorated, but even [that every wall is decorated] with incised marble and marble borders with worm-patterns (*vermiculatis*) with depictions of objects and animals." He

[9] Several of the more decorative, figural, opus tessellatum mosaics were removed upon discovery and are preserved in the National Museum, but none of the non-figural mosaics have been similarly protected.
[10] Winckelmann 1771, iv.
[11] Dunbabin 1999, 343.

continued to remark that "we began also to paint with stones."[12] This was likely a reference to the intricate designs of *vermiculatum* patterns and how they resembled paintings. In Varro's fragmentary *Menippean Satires*, he wrote, "Bordering around a lacuna, you will make for me a wavy pattern, and a worm pattern (*vermiculata*), and what is more, [it should be] huge (one forming a border around another), and a depiction of the whole world."[13] The difficulty with Varro's passage is that it does not specifically reference whether this design was a mosaic or a painting. According to Ioannis Vahleni's commentary on Varro, the passage could possibly indicate a mosaic pavement. He wrote that, "Moreover, most meander patterns and vermiculatum patterns are as pavements and emblemata."[14] The emendation of the word *lacunaria* also inspires the image of a blank space with a meander border, as if waiting for the emblema to be set into it. The term was used in several other instances for decidedly non-mosaic connotations: at least four other occasions in which it referred to Lucilius' non-extant *Satires* where he employed it as imagery when referring to an orator's capacity for eloquence,[15] and several sources when its "worm" meaning was not metaphorical.[16] Varro's description seems to be the only one which possibly used the term to describe pavements that are reminiscent of Pompeii's mosaics.

Like Varro's description, the opus vermiculatum mosaics of Pompeii are almost all emblemata with a bordering mosaic, mostly in the opus tessellatum form.[17] An emblema (pl. emblemata) is the central section of the mosaic which is often designed and produced separately from the rest of the pavement. As is the case with the opus vermiculatum mosaics, emblemata are often much more decorative and detailed than the surrounding sections. From a distance, as in Pliny's poetic explanation, these mosaics appear just as fluid as paintings and indeed some scholars believe the compositions of some of the opus vermiculatum mosaics were copied from

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[12] Plin. *Nat. Hist*. 35.2-3, "[…]*nunc vero in totum marmoribus pulsa, iam quidem et auro, nec tantum ut parietes toti operiantur, verum et interraso marmore vermiculatisque ad effigies rerum et animalium crustis*[…]*coepimus et lapide pingere*."

[13] Varr. *Men. Sat.* 533.1, "Περιέχοντα [*lacuna]ria mihi facies maeandrata, et vermiculata, atque etiam adeo ingens (alii cingens) orbem terrae*"; the original text has been emended, as Wordsworth says, "where *vermiculata* has rightly been restored for *vinculata*" (1874, 603).

[14] Vahleni 1858, 159-60.

[15] Lucil. *Sat.* 2.84 [Cic. *de Orat* 3.171; Cic. *Brut*. 274; Quint. *Inst. Orat.* 9.4.113];

[16] "worm-eaten oysters," Apul. *Apol*. 35.9.; "worm-like fingers," Mart. Cap. *de Arith.* 7, § 729.

[17] Opus tessellatum is defined by Dunbabin as a "mosaic made of regular squared tesserae of cut stone, etc., distinguished by their larger size from vermiculatum" (Dunbabin 1999, 343).

earlier, Hellenistic paintings.[18] Their artistic value has been overshadowed by the extensive corpus of Roman wall paintings that decorate many of the wealthier houses at Pompeii and indeed have defined all of Roman wall painting. However, they still have much information to offer, particularly about the elite society of Pompeii. Almost all of the 37 mosaics included in this study are emblemata. There are five exceptions which, although they are opus vermiculatum mosaics, are not technically emblemata. These will be discussed in more detail below.

The careful way in which the mosaics at Pompeii, and in particular the opus vermiculatum mosaics, were constructed is evident in their detail and quality, and for this reason their treatment and preservation should be handled just as carefully. According to Katherine Dunbabin, "mosaics are among the most durable forms of decorative art to have survived from antiquity."[19] This does not mean that they are able to continue to survive unaided. The opus vermiculatum mosaics which have been left in situ, less than half of the total, are in danger of damage by natural and human factors. In order for future generations of scholars and students to understand the ancient world, artifacts and architectural remains such as these mosaics must be carefully preserved in a state as close to the original as possible.

During the excavations at Pompeii in the 18th and early 19th centuries, the archaeologists likely believed that the best way to preserve the mosaics was to remove them.[20] While most of them were removed immediately after excavation to the Royal Cabinet of Portici in the palace of the King of Naples (which would later become the Real Museo Borbonico, then the National Archaeological Museum of Naples), some of them still remain in situ. As exhibited by Fausto Zevi, the former archaeological superintendent of Naples, archaeologists and conservators had not, until recently, come to a consensus about how to deal with excavated remains. He acknowledged that, "Every archaeological discovery of note poses a dilemma concerning the conservation of what has come to light. Should we leave what we have found in place, thus privileging the context? Or should we extrapolate, remove and take to a museum those objects or parts of a monument that appear to have some greater significance?"[21] With these words,

[18] Ling 1998, 29.
[19] Dunbabin 1999, 1.
[20] The same was the case for the excavated paintings. Winckelmann (1771, 25) wrote that, "those walls which had paintings on them have been cut out, and carried off, that such inestimable pieces might not suffer by the air or rain."
[21] Zevi 1998, 1.

Zevi introduces not only his study on the mosaics of the House of the Faun, but also introduces the fundamental question to be answered by every archaeologist and conservator. The current consensus, however, which became standard shortly after the creation of the International Committee for the Conservation of Mosaics (ICCM) in 1977, is that mosaics should be left in situ if at all possible. The general idea is to preserve the overall site close to its ancient composition so that the individual artifacts and the architectural remains can be seen together in their original context, which for Pompeii means a context frozen in time by the 79 C.E. eruption. Unfortunately, the most recently discovered opus vermiculatum mosaic was discovered in 1931, over 40 years before the founding of the ICCM and before the development of their conservation ideals.

New technologies and ideas in the field of mosaic conservation have allowed in situ treatments to occur more and more often. Mosaic conservators now consider detachment to be an intervention of the last resort,[22] but this view is different from the way in which mosaic conservation and study was viewed at Pompeii in the 19th century when mosaics like the ones from the House of the Faun were discovered. In fact, although most of the opus vermiculatum mosaics were emblemata, they were still detached from the larger, bordering mosaic. Presently at Pompeii, conspicuous holes are all that is left where once some of the most beautiful artwork in the city was located (fig. 1.2).

Even with all of the problems from the early excavations, the removal of mosaics from their original contexts, and the delinquency of protection of some of the mosaics, there are still opportunities for mosaics to provide contextual information. Some opus vermiculatum mosaics still remain in situ and even more could be waiting underneath the ash and pumice in the unexcavated sections of Pompeii. It should be the duty of archaeologists and conservators at Pompeii to protect these and keep them safe for future study and appreciation, but the mosaics that have been left in situ are barely protected from tourist traffic, let alone natural or unexpected phenomena like weather. In these cases, the preservation and safety of the mosaics have been sacrificed in order to present them to the public.

Research into the state of preservation of mosaics at Pompeii is hindered by the deficiency of details concerning the mosaics in the excavation records and the poor availability

[22] Roby 2006a, 23.

of treatment documentation. Other than the excavation reports, the only published material concerning the excavation and treatment of Pompeii's archaeological remains which were contemporary with the excavations are a collection of letters from the 19th century, mostly between the director of excavations at the time, Michele Ruggiero and Giuseppe Fiorelli, the superintendent of Naples. These letters come from the archives of the SAP and it is likely there is more documentation from the SAP and National Museum archives which is unpublished and therefore not readily accessible. Current museum procedure, defined in part by the International Council of Museums (ICOM), dictates that a museum should prepare a full condition report of all objects it receives.[23] Although this was first published by ICOM in 1974, it is reasonable to believe that this was standard practice prior to this publication since keeping accurate condition reports would clearly define the museum's responsibility for the artifacts. Unfortunately, if condition reports exist from the National Museum concerning the opus vermiculatum mosaics, they are not published.

Recent scholarship in mosaic conservation has focused on issues ranging from individual mosaics to whole sites, and modern techniques in conservation, preservation, and even presentation of the mosaics. Since the creation of the ICCM in 1977 and later, the Associazione Italiana per lo Studio e la Conservazione del Mosaico (AISCOM),[24] the various topics in mosaic conservation have been greatly debated. Both the ICCM and AISCOM have held conferences since their foundation concerning both general and specific topics in mosaic conservation, the proceedings of which are published. The majority of the research presented at these conferences focuses on the conservation of ancient mosaics. However, in the 30 years that the ICCM has held their conference and the 18 years that AISCOM has held theirs, neither the conservation of Pompeian mosaics in general, nor even the conservation of any individual mosaic from Pompeii has been discussed.

Professional forums such as the ICCM conferences and AISCOM colloquia have relatively general foci which would not necessarily exclude the study of Pompeii, so it is interesting that the site has been so neglected. Outside of these major mosaic conservation

[23] ICOM 1974, 3.

[24] The ICCM was created during a meeting of the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) by members interested in creating a specific committee for the conservation of mosaics; AISCOM was developed in 1990 through the Università degli Studi di Roma "La Sapienza."

associations, the topic of the conservation of Pompeii's opus vermiculatum mosaics has been attempted only twice, both during the 2002 Convegno di Studi della Scienza e Beni Culturali.[25] The state of preservation of opus vermiculatum mosaics at Pompeii has rarely been addressed in scholarship and this is likely due to the lack of implementation of any modern conservation or preservation methodology. The principles behind the creation of the ICCM have yet to be applied to the mosaics at Pompeii. The reason for this may lie with the mission of the SAP to present the site to the public as completely as possible. This coincides well with the ICCM tenet to keep mosaics in situ, but clashes with many of the current conservation and preservation techniques.

Although the conservation and preservation of mosaics at Pompeii is a serious concern, it does not receive as much attention as other artistic and architectural elements at the site. In terms of major conservation issues at Pompeii, the SAP and the archaeologists at Pompeii have routinely attempted to treat and preserve both wall paintings and structural ruins more than mosaic pavements. The Ufficio Scavi di Pompei, the office dedicated to excavation and preservation at the site, has published their activities in the *Rivista di Studi Pompeiana* since 1987, but, like the previously mentioned conservation associations, have not discussed the conservation of mosaics. The majority of their studies deal with the development and implementation of conservation treatments on wall paintings, specific artifacts removed from the site, and the preservation of the structural identity of the ruined city.[26]

What follows is an in-depth exploration into the problems of conservation, preservation, and presentation faced by those who are determined to protect the cultural heritage and invaluable historical information provided by Pompeii's opus vermiculatum mosaics. Included is a brief examination of the mosaics themselves, focusing on production, iconography and contextual importance. The discussion of how the mosaics have been treated since their discovery will cover both excavation methodology and any attempted conservation treatments. A chapter on the preservation of the mosaics concerns the maintenance, either in situ or in the

[25] Biscontin and Driussi 2002; the conservation and restoration of the Alexander mosaic from the House of the Faun (Ardovino 2002a) and the problems of conservation of the Tragic Mask mosaic from the House of M. Castricius (Giudisce 2002) are presented.

[26] The *Rivista di Studi Pompeiana* is published by the Associazione internazionale Amici di Pompei who proclaim that their goal is "to promote a better knowledge of Pompeii, studies and excavations, as well as the preservation of the monuments of the old city" (Soprintendenza archeologica di Pompei 2004a).

museum, which results in their prolonged protection, and a section on the preservation of context and restorative efforts will discuss how the presentation of the mosaics may also have implications for their preservation. As a catalog, this study will compile the necessary historical information in an attempt to provide further understanding of the reasons for the poor state of preservation of the opus vermiculatum mosaics from Pompeii, focusing primarily on the problem of preserving the in situ examples. This understanding should ultimately lead to the discovery of how these problems hinder the increase of knowledge from the mosaics and provide ideas for solutions to these problems based on contemporary mosaic conservation ideology.

CHAPTER 2

THE MOSAICS

Pompeii lays claim to some of the most detailed and ornate mosaic pavements preserved from the ancient world. Since their discovery, these mosaics have intrigued and impressed some of the preeminent minds of their times. For example, when Mark Twain visited the site, he remarked, "there stand the long rows of solidly-built brick houses (roofless) just as they stood eighteen hundred years ago, hot with the flaming sun; and there lie their floors, clean-swept, and not a bright fragment tarnished or wanting of the labored mosaics that pictured them with the beasts, and birds, and flowers which we copy in perishable carpets today."[1] Twain probably did not sense the irony of comparing the mosaics, which were (and still are) in danger of deterioration, when he compared them to "perishable carpets." He did, however, acknowledge the high quality of mosaics. The opus vermiculatum mosaics in particular have incredible detail due to the use of polychrome, minute stone tesserae. Before attempting the discussion of the "second life" of Pompeii's opus vermiculatum mosaics, it seems appropriate to introduce the mosaics in their original context. This chapter will address the construction of the mosaics, the question of a Pompeian mosaic workshop, the iconographic themes used in the mosaics, their architectural and spatial contexts, their distribution throughout Pompeii, and the importance and meaning they had to their owners. Their original, ancient significance, particularly the aesthetic value of their figural decorations has been the motivation for their removal, display and consequent preservation.

The majority of the 37 opus vermiculatum mosaics are emblemata, excluding five. Two of the exceptions are from the House of the Faun (VI.12.2) and the other three are in the House of Paquius Proculus (I.7.1). The placement of these exceptions is a telling factor that the owners of the houses wanted to display their elite status. The set of three small opus vermiculatum mosaics which decorate the entrance to the Alexander exedra in the House of the Faun (cat. 23) contain the necessary 4-millimeter tesserae but are not emblemata because they are not the central decoration for a larger pavement. It is believed that the Alexander Mosaic was the prized

[1] Twain 1867, 327.

possession of the owner of the House of the Faun and this is why it is so large.[2] Thus even the mosaics which decorated the entrance to the Alexander exedra were allowed to stand on their own and were of comparable quality to the central mosaic.[3] The second exception (cat. 18) is a mosaic that, before it was removed, was a scendiletto, or decorative strip, which divided the fauces and the atrium in the House of the Faun and was designed as the border for an opus sectile mosaic (fig. 2.1). Since it decorated the fauces, it is likely that this mosaic was also important to the owner of the house as a proclamation of his elite status.[4] The fauces is arguably one of the most important sections of the house of the Roman elite since it would have been the first opportunity for the patron to make an impression on both personal visitors and those who came to his house for the *salutatio*. Decoration within the fauces is also often identified as being apotropaic.[5] This mosaic, which is a band of dramatic masks intertwined with vegetation, teased the casual passerby and visitor and gave a hint of the kind of decorative pavements that lay within the rest of the house. The original owner of the House of the Faun, who judging from inscriptions found in the house was probably Oscan, may have used the opus vermiculatum mosaics to assert his elite status.

Three of the opus vermiculatum mosaics in the House of Paquius Proculus should not be defined as emblemata because they are not the central focus of the pavement and do not seem to have been set into the floor separately from the rest of the design. The entire floor of the main atrium of the house is a decorative mosaic which, although it was designed to look like it had many separate panels, does not seem to contain any actual emblemata. While most of the figures are opus tessellatum, three of them were realized in opus vermiculatum. The figures, a lion (cat. 4) and two peacocks (cat. 5 and 6), may have had special significance to the owner of the house, and while they are the most decorative portions of the floor, they are not located in any specifically prominent position (fig. 2.2).

The incredibly meticulous and specialized work necessary to create opus vermiculatum mosaics raises the question of where they were made. Several historians believe there was a

[2] According to Berry (2007, 165), "the mosaic formed the visual focus and highlight of the house, and sets it apart from all other Pompeian houses."
[3] Zanker 1998, 40.
[4] The discussions concerning the use of space in Pompeian households follows the model laid out in Wallace-Hadrill 1994.
[5] Dunbabin 1999, 312.

professional mosaic workshop in or around Pompeii. If this workshop existed, it was probably active from the end of the second or beginning of the first century B.C.E.,[6] and may have produced some or all of Pompeii's emblemata. Roger Ling recognizes that "the smaller panels…could be shop-bought pieces; indeed the subjects of those in the House of the Faun can be paralleled in other houses at Pompeii, as well as in other Italian cities, suggesting that there were certain popular compositions which the mosaic ateliers reproduced time and again."[7] For example, an opus vermiculatum mosaic in the House of the Faun which depicts a marine scene (cat. 20) is strikingly similar to one (cat. 34) from the House of Five Floors (VIII.12.16), another (cat. 2) from the House of the Colored Capitals (VII.4.31), and still another (cat. 37) from the House of Cipius Pamphilus (VII.6.38). Each of the marine mosaics displays similar species of marine life in relatively similar positions. One can easily recognize the similarity of the central battle between an octopus and a spiny lobster in the mosaics from the House of the Faun and the House of Five Floors.

There are also several opus vermiculatum mosaics from Pompeii with lion iconography. Unlike the various marine mosaics, the lion mosaics have few similarities beyond incorporating a lion in some way into the design. For instance, the lion mosaic (cat. 36) from the House of the Faun depicted a lion positioned frontally. The other two lion mosaics in Pompeii feature a lion, but use the animal as part of a larger scene. The Lion mosaic (cat. 17) from the House of the Centaur (VI.9.3) depicts the lion centrally and larger than the other figures, but it is still a composite scene. The third lion mosaic (cat. 32) from the House of the Mosaic Doves (VII.2.34) resembles the one from the House of the Faun in that the lion is similarly depicted frontally, the details of its face are comparable, and the lion is the most prominent figure in the scene. Also, the lion is part of a larger scene, this time in which it is attacking a leopard. The lion's position and design details are further evidence for the possible existence of workshops with standard compositions.

Another theory, presented in part by Ling, is that some of the emblemata, specifically the two "exquisite pieces" from the Villa of Cicero, may have been imported from Greece or the Near East.[8] The two mosaics, the Street Musicians (cat. 11) and the Sorceress (cat. 12), identify

[6] d'Ambrosio 2000, 61.
[7] Ling 2005, 48.
[8] Ling 1998, 14.

Dioskourides of Samos as the artist. It is not known whether Dioskourides physically created the mosaic, the design, or paintings from which the design was taken, but his influence is certain.[9] In fact, the scene from the Street Musicians mosaic is replicated almost exactly in a later fresco from Stabia (fig. 2.3). The fresco does not contain the signature of Dioskourides which could mean that the mosaics, with the signature, were more directly influenced by the Greek artist. Interestingly, the aforementioned marine mosaics can find very close comparanda throughout the Mediterranean, in cities such as Rome and Palestrina in Italy, Ampurias in Spain, Soluntum and Syracuse in Sicily, and Delos, Rhodes, and Kos in Greece (fig. 2.4). Even in ancient literature, the Greek influence on Roman mosaics was made clear. Pliny wrote, "Paved floors originated among the Greeks and were skillfully embellished with a kind of paintwork until this was superseded by mosaics."[10] The Near Eastern influence is also clear, especially in the opus vermiculatum mosaics with Nile scenes. Even the mosaics from the House of the Faun and the House of the Menander (I.10.4) which depict a symplegma (cat. 19 and cat. 9), or an erotic embrace between a maenad and a satyr, can find comparison with an emblema from Thmuis, in Egypt (fig. 2.5).[11] However, like the Greek-influenced mosaics, these examples only prove influence, not importation.

In terms of iconography, the 37 opus vermiculatum mosaics from Pompeii can be categorized into four distinct themes (fig. 2.6). The mosaics display a Pompeian appreciation of nature, mythology, the theater, and history. The majority of the mosaics (18) have a nature theme and display either groups of animals or a marine/Nile scene. The second most frequent theme (9) concerns the theater and contains images as simple as dramatic masks (e.g. the border mosaic just inside the entrance to the House of the Faun) or as complex as full scenes from a play (e.g. the Satyr Play [cat. 16] from the House of the Tragic Poet [VI.8.5.8]). The third most common theme (8) shows an allusion to ancient mythology by depicting either specific events (e.g. Theseus and the Minotaur [cat. 3] from the House of the Labyrinth [VI.11.9.42]) or individuals with mythological contexts (e.g. Medusa [cat. 13] from the House of the Vestals [VI.1.7.23]). There are two mosaics with a non-fictional or historical theme. One, the portrait of

[9] The inscriptions say "ΔΙΟΣΚΟΥΡΙΔΗ ΣΑΜΙΟΣ ΕΠΟΙΗΣΕ": "Dioskourides of Samos made [this]."
[10] Plin. *Nat. Hist,* 36.184, "*Pavimenta originem apud Graecos habent elaborata arte picturae ratione, donec lithostrata expulere eam.*"
[11] Daszewski 1985, 160-3, no. 40, pl. 35a.

an unknown woman (cat. 35) from a termopolio (VI.15.13), is so detailed and life-like that it is presumed to be a portrait of an actual woman, making it one of few two-dimensional portraits from Pompeii and definitely the only mosaic portrait.[12] The second non-fiction mosaic is the famous Alexander mosaic (cat. 24) from the House of the Faun, which depicts a battle between Alexander the Great and the Persian King Darius. Since there are no specific details in the mosaic which identify the battle beyond the portraits of Alexander and Darius, it is debated which of the two major battles featuring those prominent figures is depicted in the mosaic: the Battle of Issos in 333 B.C.E. or the Battle at Gaugamela in 331 B.C.E. Although the Alexander mosaic is the sole example of an historical event depicted in an opus vermiculatum mosaic at Pompeii, the recognition of the separate category is still justifiable because there are other, contemporary examples of historically thematic mosaics from the region around Mt. Vesuvius (fig. 2.7).[13]

According to Dunbabin, the patrons, in most cases, likely chose the subjects to be represented in their mosaics while the mosaicists would have used familiar patterns in styling the figures.[14] Only the most exceptional mosaics, such as the Alexander mosaic and Tiger Rider mosaic (cat. 21) from the House of the Faun, and the Neptune and Amphitrite mosaic (cat. 27) from the House of the Granduke of Tuscany (IX.2.27) would have been truly custom-made. In this way, the patrons could control how the mosaics portrayed their social status. The use of an opus vermiculatum mosaic for the scendiletto in the House of the Faun seems to suggest that the owner was so wealthy that he could use an expensive mosaic in a relatively ordinary way which would tease visitors, particularly those who did not have the adequate social status to enter the rooms deeper within the house which contained the more spectacular mosaics. Later mosaic pavements, such as those at Piazza Armerina, show a trend towards using iconography to promote their public activities and wealth.[15] This is more indirectly done at Pompeii, where the existence of an opus vermiculatum mosaic in one's house was a sign of affluence and perhaps some of the thematic designs imply a relationship between the owner and that theme. For

[12] Sampaolo 1994, 699.
[13] One prominent example is the so-called Philosopher mosaic from the House of T. Siminius Stephanus at Torre Annunziata which, although it does not depict a specific event as the Alexander mosaic does, is believed to depict Plato and his disciples (Dunbabin 1999, 30).
[14] Dunbabin 2004, 29.
[15] Dunbabin 2004, 29.

example, the theater mask scendiletto in the House of the Faun or the Tragic Mask from the House of Ma. Castricius would represent the owner's interest in the theater.

The distribution of these established iconographic themes throughout Pompeii and the other cities in the Vesuvian region has led scholars to believe that there was a mosaic workshop in or near Pompeii. The existence of the workshop is still only conjecture since no evidence of one has yet been found in or around Pompeii. And while scholars cite the strong influence of Hellenistic Greek painting and mosaics as influence for the designs found on the mosaics, it is unlikely that they came from Greek workshops. Evidence for this is provided by Ruth Westgate who cites the lack of lead strips in the Hellenistic Pompeian mosaics, which are often used in their Greek counterparts to delineate the design.[16] There is evidence, however, for the sale of pre-fabricated emblemata at Pompeii. In one bottega (VII.13.23), two small opus vermiculatum mosaic emblemata (cat. 14 and 15) were found, probably awaiting sale.[17]

Further study into the manufacture of the mosaics and the possible existence of a workshop may also include studies into the origin of the stones and compounds that make up the cement substructure. A short and general discussion of mosaic petrography is presented by Dunbabin,[18] and in Giudisce's study on the conservation of the Tragic Mask mosaic (cat. 1) from the House of Ma. Castricius (VII.16.17), the author has identified most of the types of stones used for the mosaic's tesserae.[19] These identifications show that the marble and stones were imported, mostly from North Africa and Greece, but do not allude to where the mosaics were finally assembled. One final piece of evidence for the existence of a workshop that manufactured many of the Pompeian opus vermiculatum mosaics is the trays in which the emblemata were set. According to Giudisce, "almost all of the emblemata from Pompeii that still have their original supports are realized [with travertine trays], with the unique exception of the emblema with the pygmies from the House of the Menander that has its support in terracotta." The two unused emblemata awaiting purchase in the bottega were also set into travertine trays.[20] While the use of travertine trays is not unique to Pompeii, the fact that almost

[16] Westgate 2000, 263.
[17] According to Dunbabin (1999, 273), "[they] were found in a shop at Pompeii (VII.13.23) along with a collection of bronzes that have been interpreted as stock for sale"; see also Pernice 1938, 172, and De Vos 1991, 45.
[18] Dunbabin 1999, 280.
[19] Giudisce 2002, 168 tab. 2.
[20] Giudisce 2002, 166.

all of them were made in this manner shows that they may have come from the same workshop, although travertine was commonly used in construction at Pompeii and would have easily been acquired from the extensive quarries near Tivoli.[21]

The actual production of the opus vermiculatum mosaics is still something of a mystery. Who these mosaicists were and even where they worked is still unknown, but it is possible, due to both the fragmentary form of some of the mosaics and some ancient literary evidence, to understand how they were physically manufactured. This primary literary evidence comes from Vitruvius' *de Architectura*. According to Vitruvius, mosaic pavements were made by first creating the cement substructure consisting of three distinct yet compound layers. The first layer, called the statumen, was created by spreading rubble over a leveled surface. This was followed by the rudus, a layer of mortar consisting of a mixture of rubble and lime which was supposed to be no less than nine digits (approximately 6.5 inches) thick. Above the rudus was the nucleus, another mortar layer made of powdered pottery and lime, no less than six digits (approximately 4.5 inches) thick. The tesserae were then painstakingly laid "*supra nucleum*" in a very fine layer of mortar, and the cracks were filled in with lime and sand (fig. 2.8).[22] Setting the individual tesserae into the cement would have taken quite a bit of time and ensuring that the details of the opus vermiculatum decoration were seamless would have added to the difficulty. For this reason, they are viewed as remarkable works of art, especially the Alexander mosaic, whose approximately 1.5 million tesserae would have been exceptionally arduous to place.[23] Vitruvius' method may have been the ideal, but not necessarily the common practice. The layers that he proposed can be found in most mosaics, but the proportions and the thickness vary widely and can be attributed to differences in the nature of sites and also the materials available to the mosaicists. Knowing Vitruvius' proportions can help in understanding the general construction of the mosaics, but for conservation purposes, the construction layers should be examined on a case-by-case basis.

Something more should be said here about the spectacular nature of the Alexander mosaic. Its exceptional size and unique subject matter likely prove that it would not have been a

[21] Clarke 1847, 66.
[22] Vitr. *de Arch*. vii.1.1-4.
[23] Dunbabin (1990, 40), "emblemata are usually between half a metre and one metre square, occasionally less; and even the fine mosaics apparently laid on the spot are seldom larger. The laboriousness of the vermiculatum technique inevitably imposed its own restrictions upon the scale of the work."

workshop piece, but created in situ. The Alexander mosaic is the largest and most ornate opus vermiculatum mosaic that survives from ancient times and according to Katherine Dunbabin, "the accurate representation of details such as the costume and the equipment of the Persians" is one of the reasons why it is believed that the mosaic is a "very close copy of a painting made shortly after the event."[24] The painting is attributed to the Hellenistic painter Philoxenos of Eretria based on a description of one of his paintings in Pliny's *Natural History*. Pliny described a painting of "Philoxenos of Eretria, who painted for King Cassander a picture representing one of the battles between Alexander and Darius."[25] The highly representational images of Alexander and Darius show an attention to painstaking detail that is virtually incomparable in other Hellenistic mosaics.

The Alexander mosaic's placement in an exedra behind the first peristyle of the House of the Faun not only meant that the room and view of the mosaic was restricted to the owner's personal visitors but also, according to Clarke, "A dramatic visual axis from the fauces permitted the visitor to look through the atrium and through a broad window in the tablinum into the first peristyle…and the exedra containing the Alexander mosaic was its eventual goal."[26] While the House of the Faun's extensive *durchblick* may eventually lead to the Alexander exedra (fig. 2.9), the mosaic itself is not visible from any of the anterior rooms and therefore would probably never have been seen by the normal congregation of clientes or uninvited guests.[27] Again, this exclusivity shows that the Alexander mosaic would have been one of the prizes of the owner's collection of architectural art.

As exhibited by the placement of the Alexander mosaic, wealthy Pompeians used opus vermiculatum mosaics mostly for central emblemata in rooms of their houses that would be seen only by intimate guests. For example, in the House of the Faun, eight of the ten opus vermiculatum mosaics are either inside alae, triclinia, or tablina that are out of sight from the entrance (fig. 2.10).[28] In this way, the opus vermiculatum mosaics helped to define their owners' elite status. The exclusive visibility of the mosaics would also have offered a measure of

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[24] Dunbabin 1999, 41.
[25] Plin., *Nat.Hist.* 35.110, "[…]*Philoxenum Eretrium*[…]*Cassandro regi picta, continuit Alexandri proelium cum Dario*."
[26] Clarke 1991, 83.
[27] Christensen (2006, 30) agrees that the opus vermiculatum mosaics, represented in her study by those in the House of the Faun, "were intended to be showpieces viewed…by a select group of invited visitors."
[28] Christensen 2006, 35.

protection for the mosaics. They would have been walked upon less than the pavements in the more public areas of the house and as a result would not have sustained as much damage. It is not known, however, whether the ancient owners of the mosaics would have recognized this corollary.

At first glance, the distribution of opus vermiculatum mosaics at Pompeii seems relatively erratic (fig. 2.11; tab. 2.1). Except for regio II, which is dominated by the amphitheater and gymnasium, all of the regiones which have been completely excavated claim at least one. Regiones III, IV, and V, which have been excavated far less than the others, may be hiding more underneath their unexcavated portions. The mosaics are spread throughout much of excavated Pompeii, but it is clear that regio VI has the highest concentration, although any statistical analysis of the geographic distribution of the mosaics is skewed by the high concentration in the House of the Faun. Regio VI also has the most houses which contain at least one opus vermiculatum mosaic. This is to be expected since regio VI has the highest concentration of large and wealthy houses. There are only two outliers: the Memento Mori mosaic (cat. 29) from the officina coriariorum (tannery) of M. Vesovius Primus (I.5.2) and the mosaic portrait of a woman from a termopolio (tavern) are the only opus vermiculatum mosaics to be found outside of a Pompeian house.[29] Their unique subjects and placement suggest that the owners of the tannery and the termopolio were wealthy and possibly the owners of other houses which contained opus vermiculatum mosaics.[30] Within the individual houses, the distribution of the mosaics is much more consistent. Except for the aforementioned scendiletto in the House of the Faun and the three from the atrium of the House of Paquius Proculus, most of the opus vermiculatum mosaics were found in rooms which were viewed only by personal guests of the owner, mostly triclinia or cubicula (fig. 2.12).

This chapter was a short introduction to the context of opus vermiculatum mosaics in Pompeii. The iconography, location, and in particular, the contextual importance are elements that establish the overall value of the mosaics and therefore are in need of protection through conservation and preservation. The order in which they were excavated was a random

[29] The two opus vermiculatum mosaics found ready for sale in a bottega are not included as outliers because their similarity to the Tragic Mask mosaic from the House of M. Castricius suggests that they would have also been intended for placement in a house.

[30] It has also been suggested that the termopolio was probably not the original setting for the mosaic portrait of the woman and it would have been custom made for a reception space in the original owner's house (Clarke 2003, 264)

coincidence (tab. 2.2), and thus the excavation and conservation procedures were contingent upon the limitations of the archaeologists and the technology of the time. For this reason, the rest of this study will concern the "second life" of the mosaics: their excavation, conservation, and preservation.

CHAPTER 3

TREATMENT

In order to understand completely the current state of preservation of the opus vermiculatum mosaics discovered in Pompeii, it is necessary to consider every event or action which may have had an impact upon the mosaics since, as Chris Gosden notes, archaeological objects are passive, being "constantly transformed" by "movement and change."[1] This consideration begins with the original construction of the mosaics. One must consider how the mosaicists created the construction layers, whether or not it was made in a workshop and transported to its final resting place, and when and where it was finally placed. Next, how the mosaics were treated between the time of their construction and the eruption of Mt. Vesuvius in 79 C.E. should to be studied. The mosaics would have been affected by their use as functional pavements and walking spaces and by the effects of weather and vegetal growth and therefore were likely maintained by their owners and kept safe from these destructive forces of nature. If the mosaics were made in a workshop, certainly their placement in the solid travertine or ceramic trays would have helped prevent some of the natural damage such as underground water and vegetal growth. They could not have been protected, however, from the earthquake of 62 C.E., which undoubtedly damaged parts of most of the pavements. Virtually all of the opus vermiculatum mosaics from Pompeii have partial damage and visible lacunae. This seems likely to be as much the result of the eruption as the earthquake even if the eruption was the factor that contributed to the preservation of much of Pompeii's architectural remains. Finally, consideration must be taken as to whether the mosaics may have been treated or repaired after the earthquake. Two of the three mosaics from the House of the Mosaic Doves were described as having been "covered by a layer of ancient lime, and that may have been the case because the house, in which they were, was being restored."[2] Also, the Alexander mosaic was protected from further damage during the restoration of the House of the Faun between 62 and 79 C.E. Supports were built to stabilize the walls of the Alexander exedra and a temporary, wooden roof

[1] Gosden and Marshall 1999, 169.
[2] Capri 1996, 890.

was constructed above the mosaic.[3] Furthermore, as will be discussed in chapter 4, several of the mosaics seem to have been restored in antiquity.

In one apocalyptic event, ash and pumice rained down from the skies on August 24th and 25th 79 C.E., changing the mosaics forever. They would no longer be walked on or valued for their function within the house. As Gosden notes, rediscovered objects only "bring with them fragments of old lives, threads of earlier meanings."[4] As soon as they were covered, they laid awaiting discovery and the beginning of their "second life." The following chapters will discuss this "second life." The manner in which the mosaics were treated upon discovery, their excavation and conservation, were contingent upon the years they were found and the archaeologists in charge of their excavation. The decision to either remove the mosaics or leave them in situ profoundly affected not only their preservation and the methods needed to maintain and protect them from further deterioration, but also the way in which they would be viewed by both scholars and the general public.

The terms "conservation" and "preservation" will be used frequently throughout the rest of this study. They are empirically distinguished by their intended effects. Conservation implies immediacy. The treatments and actions which are deemed conservation are intended to immediately stop or reverse the deterioration of the mosaics. Conservation is generally more invasive than preservation and includes intensive cleaning of the mosaics, often with chemical solutions, and the protection of the edges and lacunae of the mosaics by filling the missing sections with lime mortars. Technically, some measures of conservation are taken during excavation, such as shading and controlled drying.[5] Unfortunately, they are not always utilized because they slow down the excavation. Preservation, on the other hand, has more to do with long term maintenance and protection than conservation. Also, unlike conservation's physical treatment of mosaics, preservation seeks to control the mosaics' environment in order to protect them. Preservation treatments include the building of roofs, structures, or devices to control the continuous effects of weather, humidity, and vegetal destruction.

[3] Richardson 1988, 124.
[4] Gosden and Marshall 1999, 177.
[5] Stanley-Price 2003, 275.

Excavation

Archaeological excavation is controlled and conscientious destruction, which lays waste to history in order to advance discovery. At Pompeii and the other Vesuvian cities, excavation is dramatically changed by the nature of the cities' burial. Nevertheless, the harmful consequences of excavation are all too familiar to any archaeologist or conservator. Joanne Berry describes the destructive nature of Pompeian excavation, stating that, "In unpeeling the layers of pumice from the site, the archaeologist also unwittingly destroys, exposing what has survived for two thousand years to the destructive force of other, everyday, elements: rain, sun, wind, dust, and the passing feet of visitors."[6] However, over 250 years of excavation at Pompeii have created very systematic techniques and methodologies which allow archaeologists to both destroy and preserve in order to discover historical truth.

The history of archaeological excavation at Pompeii is as diverse as the directors themselves. Methodological thought changed exponentially from the destructive treasure hunts of Alcubierre to the systematic discovery and removal of artifacts by Fiorelli and the in situ preservation and documentation of Vittorio Spinazzola and the other 20th century directors. The discovery of the 37 opus vermiculatum mosaics in Pompeii was spread out through the centuries and one can recognize the change in excavation and preservation methods through a lens of these mosaics. Their aesthetic value was prized above all else during the 18th and 19th century excavations, while a drive to understand their social and historical context has been the focus of more recent studies. The determination of the excavation techniques used on the mosaics was ultimately the choice of the directors, but factors such as state of preservation and even political pressure influenced their decisions.

Two of the first opus vermiculatum mosaics to be discovered at Pompeii were the Dioskourides mosaics from the Villa of Cicero, found in the late 18th century. At that time, a real archaeological methodology had only recently been adopted. Prior to the mosaics' discovery, the approach of the early "archaeologists" such as Roque de Alcubierre (director of intermittent excavations under Carlo di Borbone from 1748-1758), and his associates Karl Weber (1750-1760) and Francesco La Vega (1764-1780), was based on Alcubierre's background as a military

[6] Berry 1998, 3.

engineer. They would choose a spot at random and tunnel down until they reached the level of the buildings. Often, they would refill their tunnels once they had removed all of the museum-worthy objects, leaving none of the house visible or exposed. These "objects" included particularly beautiful or well-preserved wall paintings and mosaic pavements, which were destructively removed from their original contexts. This technique seemed to be based more on the desire of the royal benefactors to locate and remove precious objects for display at the Portici Museum instead of the preservation of site. In fact, wall paintings that were not deemed worthy enough for the museum were sometimes demolished in search of more treasures. One episode in particular from the excavations directed by Weber gives the impression that the less than systematic approach to excavating mosaic pavements in the 18th century was primarily concerned with the accumulation of treasures for the Portici Museum and not with the recovery of accurate information. When an opus sectile pavement uncovered in 1750 at the Villa dei Papiri in Herculaneum "was too large to remove intact and so had to be cut into segments and reassembled later at the museum," Weber asked whether or not he should send a drawing of the mosaic to the museum with the pavement so that it could be put back together correctly.[7] This suggests not only that the standard method of the time was to cut the mosaic pavements for removal, thus potentially permanently damaging them, but also that it was not standard procedure to keep accurate and detailed information of the artifacts removed during excavation. When excavation results were recorded, which was not often, they consisted mostly of inventories of precious finds. The famous art historian J.J. Winckelmann also noted that military engineers and untrained archaeologists were probably not best suited to decide which objects were worthy of the museum. He said of Alcubierre, "that man knew as much of antiquities, as the moon does of lobsters."[8] Fortunately, these destructive practices were banned in 1763 by a royal edict, likely prompted by the discovery of the inscription identifying the city as Pompeii.[9]

Pompeii is often identified as one of the oldest archaeological sites and thus, as Berry says, "has had a pioneering influence in the discipline of archaeology."[10] However, it was not

[7] Parslow 1995, 79; 339 n. 7.; other evidence for cutting the mosaics includes an episode in which Alcubierre, "in removing a particularly large mosaic from the villa, halted the enlargement of one of the shafts and instead ordered the mosaic cut into two pieces, 10 palms by 5 palms each (2.64 m. x 1.32 m.)" (Parslow 1995, 79).
[8] Winckelmann 1771, 22.
[9] Soprintendenza archeologica di Pompei 2004b.
[10] Berry 1998, 9.

until Weber, and subsequently La Vega, took control of the excavations in the late 18th century, that the hunt for precious finds was relinquished for a more methodical approach. And according to Berry, "it is only very recently that scholars have systematically sought to use a variety of modern archaeological techniques."[11] Weber's methodical techniques were both praised and criticized by scholars such as Winckelmann. He said that the excavations were "carried on in a very slow and indolent manner. [But] to compensate this neglect, the method observed in digging is such that it is impossible the least spot should escape unnoticed."[12]

Another significant problem observed from the early excavations at Pompeii is the considerably poor record keeping. Christopher Parslow cites the fact that "documentation was only produced for the benefit of the king and prime minister, not for publication."[13] Winckelmann believed that Weber should be praised for developing the first real documentation system at Pompeii. He wrote, "It is to [Weber's] good sense, that we are indebted for all the good steps since taken, to bring to light this treasure of antiquities. The first thing he did was, to make an exact map of all the subterraneous galleries, and the buildings they led to. This map he rendered still more intelligible, by a minute historical account of the whole discovery." Included in this map were "the particular spots, where everything taken out of them was found."[14] Unfortunately, the maps were given directly to the king and not made available to anyone else. This poor record keeping can also be seen in the official reports given to the excavation's royal patron. When the Street Musicians mosaic and the Sorceress mosaic from the Villa of Cicero were discovered, only their iconography was described in the early excavation reports, without mention of provenance, without a drawing, and without a description of excavation methods or condition.[15] It is fortunate that only a few opus vermiculatum mosaics were discovered during this time of methodological disarray, for much of the information gleaned from the mosaics would likely have been lost. However, this was only the beginning of systematic excavation and documentation which would later allow for a greater contextual understanding of the site.

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[11] Berry 1998, 9.
[12] Winckelmann 1771, 24.
[13] Winckelmann (1771, 22) uses the example of how Alcubierre handled the discovery and removal of an inscription in brass letters. He wrote that "[Alcubierre] ordered these letters to be torn from the wall, without first taking a copy of them, and thrown pell mell into a basket; and then presented them, in that condition, to the king."
[14] Winckelmann 1771, 23.
[15] The Street Musicians mosaic: Fiorelli 1860, 278; The Sorceress mosaic: Fiorelli 1860, 286.

During the tenure of Weber, Pompeian archaeologists also slowly began to recognize the importance of context in understanding the society and culture of the city. Excavation methodologies were changed and they began to leave buildings uncovered after their discovery in order to present the site as a city-wide museum. According to the National Museum's history of Pompeii, it is said that, "In this new climate, the plan was to limit the removal of artefacts and paintings as much as possible, trying to restore things in situ or to return those previously moved to the Portici Museum to their original setting."[16] The extent to which this was done will be discussed further in chapter 4, but it is not well known because the records were poorly kept. It did, however, set a precedent that would begin to establish the archaeological site and museum as they are now known.

Even through the 19th century and the directing tenures of notable figures like Giuseppe Fiorelli and Michele Ruggiero, the opus vermiculatum pavements were seen, "as simply 'aesthetic' objects, detachable from their surroundings and turned into moveable effects."[17] In an 1885 letter from director Ruggiero to then superintendent of Naples, Fiorelli, the former announces the discovery of three mosaics, including two opus vermiculatum examples (cat. 31 and 32) in the House of the Mosaic Doves (VIII.2.34). After describing the mosaics' iconographies, he mentions the detached nature of one of them, and recommends their removal in order to, as he says, "enrich greatly the most beautiful collection" of the museum.[18] Fiorelli's response approves the detachment, but asks Ruggiero to ensure that "the operation is completed with the greatest possible promptness and with all prudence."[19] Only one of the three mosaics was described as "detached in many places" and all of them were supposedly well-preserved due to the fact that "they were covered by lime already in ancient times, probably because the house was found to be in the process of restoration."[20] Modern methodologies dictate that it would have been appropriate to leave the two attached mosaics in situ, to be understood within the setting of the house. Only the partially detached and endangered mosaic should have been removed for its protection.

[16] Soprintendenza archeologica di Pompei 2004b.
[17] Nardi 1997, 13.
[18] Capri 1996, 890-1.
[19] Capri 1996, 891.
[20] Capri 1996, 890.

At Pompeii, and in fact throughout the field of archaeology, it is only a recent development that makes it standard procedure to leave discovered mosaics in situ in order to retain the full context. Gaël de Guichen remarks that, "The previous standard practice of leaving a mosaic on site without protection – or of lifting the pavement and abandoning it in storage – was clearly the result of a lack of planning, as well as demonstrative of the attitude of some archaeologists, insensitive to conservation."[21] During the 19th century when the House of the Faun and its opus vermiculatum mosaics were discovered, several scholars and archaeologists attempted to change archaeological thinking at Pompeii and, according to Zevi, "urged the sovereign of Naples not to limit himself to displaying this or that valuable object in the Museum, or this or that unusual decoration, but rather to excavate with the scope of bringing to light the entire urban organization."[22] They believed that excavation at Pompeii should result in displaying "a city with everything in its place; a city where everything would be an incomparable museum."[23] They were not altogether successful, however, and the mosaics from the House of the Faun were, as before, detached and placed in what is now the National Museum.

Unfortunately, poor excavation decisions and techniques have led to the further deterioration of the mosaics and the elimination of their contextual information. In the case of the House of the Faun, while more than 36 pavements of various kinds exist in the house, only the ten opus vermiculatum mosaics were removed and treated with care. They were seen as precious works of art, above and beyond the other pavements, which made them "museum worthy." Also, as emblemata, they were smaller, and much easier to remove. Tom Roby, a mosaic conservator for the Getty Conservation Institute, states that whenever emblemata are removed, while the decorative portion of the mosaics are cleaned, cared for, and presented to the public, the removal of the mosaics "deprives the site of significant elements that were important for an understanding of its architectural and historic character."[24] The construction layers of the mosaics: the statumen, rudus, and nucleus, which displayed the technological ingenuity of the Romans, were all but destroyed during their removal. Not much has changed in mosaic removal practices since the 19th century and the construction layers are still being destroyed for the

[21] de Guichen 2006.
[22] Zevi 1998, 15.
[23] Zevi 1998, 15.
[24] Roby 2002, 21.

preservation of the mosaics.[25] In describing this procedure, Roberto Nardi notes that, "Mosaics are still lifted, the layers beneath the tesserae destroyed, and surface irregularities flattened out."[26] This treatment eliminates the character of the mosaic whose construction layers and flawed surfaces individualize them almost as much as their figural decoration. According to Roby, "the layers that make up a floor must be saved. The signs or scars left in time – the changes, the tempering, the irregularities – must be studied, interpreted, preserved, and made understandable to the public."[27] Only one study has been attempted which, at least in part, analyzes the mortar construction layers of a Pompeian opus vermiculatum mosaic. The study, mentioned earlier, is Giudisce's examination of the Tragic Mask mosaic from the House of Ma. Castricius, and the results and their implications will be discussed further below. Until the development and application of such technologies such as Raman spectroscopy,[28] which was used in Giudisce's study, the only way to understand mosaic construction layers was after the destructive removal of the mosaics or through lacunae in the tesserae.

While excavation is only the first step for mosaics in the journey known throughout the museum world as an artifact's "second life," it is arguably the most important. The technique used for excavating the mosaic can determine how extensive the subsequent conservation and preservation must be. Also, documentation during excavation is essential to scholars, who need them to accurately assess the cultural significance of the mosaics, and conservators who, in order to continue treating and protecting the mosaics, require accurate descriptions of their previous states of preservation and prior treatments to knowledgeably conserve them. The unfortunate lack of respect by the earlier archaeologists towards the mosaics, and indeed many of the other archaeological remains from Pompeii, has left a significant gap in the ability of contemporary conservators to protect the remains. Fortunately, more recent excavation and conservation methodologies have included the treatment, and even documentation, of some of the previously excavated remains. Conversely, other exposed remains, including opus vermiculatum pavements have been left unprotected and untreated in situ. The following discussion concerning mosaic

[25] Goodburn-Brown, 1992.
[26] Nardi 1997, 26.
[27] Nardi 1997, 14.
[28] Raman spectroscopy is a technique which "consists of sending a laser beam at low power onto the specimen and analyzing the spectrum of wavelengths." The analysis resulted in the identification of the components of the construction layers (Giudisce 2002, 170).

conservation and preservation practices and their lack of implementation at Pompeii should serve as a realization that these significant works of art are not being protected as well as they could, and should, be.

Conservation

There are several stages in the "second life" of ancient mosaics, and after they have been uncovered, conservation becomes the most immediate priority for ensuring the mosaics' future. In this discussion, I will define modern mosaic conservation theory as proposed by the various organizations associated with ancient mosaic conservation. I will also explore the conservation methodologies that have historically been applied to Pompeii's opus vermiculatum mosaics and through their comparison to the more recent techniques, demonstrate how they have had detrimental effects on the state of preservation of the mosaics. Finally, I intend to propose appropriate solutions for the conservation of the opus vermiculatum mosaics which remain in situ at Pompeii and for those which may be discovered in the future.

According to the International Council on Monuments and Sites' (ICOMOS) guidelines for training in conservation, the definition of conservation is "a cultural, artistic, technical and craft activity based on humanistic and scientific studies and systematic research." It also describes the goal of conservation as "to prolong the life of cultural heritage and, if possible, to clarify the artistic and historical messages therein without the loss of authenticity and meaning."[29] While conservation practices are contingent upon the materials that require treatment, the theory and ideas behind conservation can be applied to all types of remains. The editors of the Butterworth-Heinemann Series in Conservation and Museology wrote, "Conservation has two aspects: firstly, the control of the environment to minimize the decay of artefacts and materials; and, secondly, their treatment to arrest decay and to stabilize them where possible against further deterioration."[30] The first aspect is technically preservation and will be discussed in the following chapter, while the second aspect will be discussed in depth in this chapter. The editors detail several conservation principles which should be followed. First, any of the treatments must be reversible. This is not always possible, however, because sometimes

[29] ICOMOS 1993, 1.
[30] Oddy, A. and D. Linstrum 1990, Series Editors' Preface.

the survival of the remains depends on the use of a permanent treatment. Second, any decay experienced by the artifact should not be restored. In terms of mosaics, this means that any lacunae, or holes in the surface tesserae, should not be restored. A further discussion of restoration will be presented in chapter 4.

In order to more successfully conserve mosaics and create new and more effective conservation techniques, several major, professional committees and associations have been established in the last quarter century. Most notable is the International Committee for the Conservation of Mosaics (ICCM), mentioned previously, whose dedication to mosaic preservation is admirable. Although the ICCM has yet to turn its attention to the mosaics at Pompeii, their work has protected and likely saved many important mosaics around the world. The Association for the Study and Preservation of Roman Mosaics (ASPROM) is another assemblage of scholars who see the importance of protecting ancient mosaics. While their focus is mostly Roman Britain, the scholarship and publication of the Association also deals with Italy, but never Pompeii. In terms of non-specific conservation, it is generally agreed that "the positive emergence of conservation as a profession can be said to date from the foundation of the International Institute for the Conservation of Museum Objects (IIC) in 1950 and the appearance soon after in 1952 of its journal *Studies in Conservation*."[31] This group has recognized the significance of conservation but has not yet considered any conservation issues at Pompeii.[32] Until the development of these associations and the recognition that, unlike previously thought, ancient mosaics were not practically inexhaustible, their treatment and protection went relatively unnoticed even to those, like the Association Internationale pour l'Etude de la Mosaique Antique (AIEMA), who studied them.[33]

In 1983, ICCROM published the second of a series of publications aimed at standardizing mosaic conservation practice.[34] The methods enumerated in the publication are not site specific, and therefore lay out options for many situations that may be encountered. The dedicated thesis of the publication, and indeed of almost all contemporary mosaic conservation literature, is "that,

[31] Oddy, A. and D. Linstrum 1990, Series Editors' Preface.
[32] In fact, only twice in the 50 year history of the journal has Pompeii been a topic, both in book reviews (3:4, 195; 14:1, 38-41); Also, mosaic conservation is only represented in six articles.
[33] Michaelides 2004, 32.
[34] ICCROM 1983.

in general, every effort should be made to conserve a mosaic *in situ* and not detach it."[35] During the 3rd ICCM Conference in 1986, resolutions were passed which standardized the ideals that form the basis for contemporary conservation theory. The first resolution deals with the reality indicated by Demetrios Michaelides who wrote, "If a newly discovered mosaic is not given immediate protection it will rapidly become destroyed."[36] The resolution states that, "if a mosaic cannot be provided with adequate protection in situ then it should be reburied," and if the mosaic is fortunate enough to be treated in situ, the ICCM recognized that "this should be accompanied by regular maintenance, i.e. security, drainage, biological protection, etc." According to the ICCM, "if neither of the above can be achieved then the mosaic should be transferred to an adequate store to prevent its destruction."[37] All three of these recommendations have implications for the opus vermiculatum mosaics at Pompeii. The ICCM's second resolution stemmed from an awareness that effective mosaic conservation techniques had yet to be developed. The ICCM "recognized the importance of maintaining a mosaic in its original archaeological context and, aware of the difficulties in ensuring this, recommended that research should be carried out by scientists, conservators and archaeologists" in order to create new methodologies that could solve many of the problems facing excavated mosaics.[38]

Resembling the history of excavation at Pompeii and the rest of the Vesuvian region, the history of conservation had a very shaky beginning. The first instance of conservation used for objects discovered in the Vesuvian region was the treatment of the first set of papyri recovered from the *Villa dei Papiri* in Herculaneum. These papyri, arguably the most fragile artifacts that survived the eruption of Vesuvius, were discovered in the first round of excavations at Herculaneum in the second half of the 18th century. The conservation was probably done more for the desire to read the papyri than to protect them. In fact, until recently, excavation and preservation at Pompeii had been a selfish pursuit, designed to recover and display artifacts that were believed to have great cultural, artistic, and historical value.[39] Unfortunately, the papyri

[35] Michaelides 2004, 11.
[36] Michaelides 2004, 34.
[37] Michaelides 2004, 34.
[38] Michaelides 2004, 34.
[39] Roby 2006b, 101.

were used to test experimental conservation procedures, further damaging some of them.[40] Suggestions have been made throughout the years for the development of conservation procedures at Pompeii. One of Raffaele D'Ambra's suggestions to the Commission of the Council of Civil Buildings in 1848 was the creation in Pompeii "of a supplementary museum to receive and conserve the objects of true exuberance for the collection of the Museum of Naples."[41] This was not implemented at the time.

The fact that much of Pompeii was excavated before standard conservation methods were developed has prevented the remains from being treated properly. All of Pompeii's opus vermiculatum mosaics were discovered before the foundation of the ICCM and the introduction of its principles, with most of them (approximately 75%) being discovered before the 20th century. During that time, the standard procedure for their conservation was removal, and with the exception of the Alexander mosaic, in situ conservation did not seem to be a consideration.[42] It can be convenient, in hindsight, to demonize the methods and decisions of the previous archaeologists in order to explain why they used relatively poor techniques and removed many of the opus vermiculatum mosaics. However, as Demetrios Chryssopoulos commented, "We [should] respect what they tried to do. But we should not continue in the present situation."[43] One should recognize that the reason for removing the mosaics was twofold: the desire to collect and display the mosaics and, the more altruistic purpose of protecting them.

While there have not been any major mosaic conservation projects at Pompeii, the recognition of the importance of ancient mosaics and their need for conservation can be seen in other projects around the Mediterranean such as at Zeugma in Turkey, and Mozia, Salemi, Mazara del Vallo, and Piazza Armerina in Sicily.[44] All of these projects have provided conservation treatments to the in situ mosaics and designed programs for further preservation. The treatments included aggressive cleaning, the reintegration of lacunae, the necessary

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[40] Winckelmann (1771, 111) relates one example of the unsuccessful treatments on the Herculaneum papyri: "A manuscript roll was put under a glass bell, in hopes that the heat of the sun would dissipate the moisture it might still contain, and that it would then unroll itself. But the heat of the sun, at the same time that it exhaled the moisture, loosened the ink, so that the writing was, in part, disordered; and, in part, rendered totally indecipherable."
[41] Pagano 1994, 186.
[42] Ardovino's discussion of the removal of the Alexander mosaic (Ardovino 2002a) relates the details of the debate about whether or not to remove the mosaic.
[43] Chryssopoulos 2003, 312.
[44] Zeugma: Nardi, R. 2002, 275-300; Mozia, Salemi, Mazara del Vallo: Alberti, L., et al. 2004, 212-236; and Piazza Armerina: Carandini, A. 1982, 59-93.

detachment of mosaics in danger from destruction from outside forces,[45] reburial, and sheltering. These treatments and programs have been identified as appropriate solutions by organizations such as the ICCM. The most recent, and one of the most extensive, ancient mosaic conservation projects has been carried out on mosaics in Tunisia by the Getty Conservation Institute (GCI) and was published in 2006 in *Stories in Stone: Conserving Mosaics of Roman Africa*. The publication details the processes and results of the conservation as well as interpretation of the mosaics. While it is maintained that Pompeii and the Vesuvian sites are unique in the archaeological sense, once the mosaics have been uncovered, they become as exposed and as in danger of destruction and deterioration as every other excavated mosaic. The approach taken by the GCI with *Stories in Stone* can certainly be applied to the opus vermiculatum mosaics at Pompeii and it is likely, based on current methodology, that if a major mosaic conservation project were to be employed at Pompeii, the rigorous documentation style used by the GCI would factor greatly into the survey.

The need for intervention is motivated by the deteriorative elements that threaten the preservation of the mosaics. Until the mosaics were excavated, they were protected by the layers of dense ash from the eruption. When they were uncovered, they became, as Gionata Rizzi notes, "unarmed against the ravages of atmospheric agents and consequently more vulnerable to the destructive efforts of time."[46] As the previous discussion on the excavation of the mosaics demonstrated, the removal of the mosaics was one way for the previous archaeologists at Pompeii to solve this problem, even if the mosaics' protection was not their primary objective. However, not all of the discovered opus vermiculatum mosaics were removed. For example, the lion and two peacock figures in opus vermiculatum in the extensive mosaic pavement in the House of Paquius Proculus, were not able to be removed without damaging the rest of the very decorative pavement because they are not detachable emblemata. None of the mosaics excavated after 1910, during the tenure of Spinazzola as the director of excavations, were detached. Spinazzola and his successor, Amedeo Mairui, attempted to keep as many of the discovered remains in situ as possible.

[45] Most notably, one of the mosaics was removed because it was "in a position exposed to the aggression from waves," (Nardi 2004, 149).
[46] Rizzi 2007, xx.

There are general methods of mosaic conservation which apply to all mosaics, including the uniquely preserved examples from Pompeii, and particularly the 10 opus vermiculatum mosaics which have been left in situ. Of course, there are also arguments against the validity of some of the modern conservation methods and their ability to function properly at Pompeii. Contemporary mosaic conservation theory lists three possible actions once a mosaic is uncovered.[47] The option with the longest history of use is removal, but there are two which support the idea that the mosaics should be conserved in situ: they can be re-covered with earth or another protective substance, or they can be left uncovered.

The first standardized conservation option, which was exploited during the 18th, 19th, and early 20th century, is the removal of the mosaics. Although traditionally this was common practice, contemporary theory disfavors removal, despite the fact that it may sometimes be necessary for the protection of the mosaics. Today, in order for a mosaic to be considered for removal, it should be in danger of further deterioration and in a situation where it could not be conserved in situ. According to Zevi, "Before our eyes we can see the dramatic deterioration of the mosaics that have been left at Pompeii, and we can only be thankful for the protection that the museum halls have afforded so many other ancient mosaics."[48] One example of the deterioration is the Lion mosaic, discovered in the House of the Faun. It was not removed to the museum because of its poor state of preservation. The mosaic has since completely deteriorated.[49] The removal of the mosaics did not always ensure their safety, however. In 1976, the opus vermiculatum Marine mosaic from the House of Cipius Pamphilus (VII.6.38), which was discovered in 1910, was detached and subsequently stolen.

The second option, reburial of the mosaic, is recognized as the most effective for long-term preservation, but is not always an appropriate solution. Covering the mosaic may preserve it, but it severely limits its availability. One of the main reasons for leaving mosaics in situ, especially at Pompeii, is so that the site can remain as intact as possible and available to visitors. The protection of the original context of the site, which is so important at Pompeii, is threatened when individual elements are not visible. These limitations have been recognized by the

[47] Stanley-Price and Ponti 2003: "The three main options under discussion were those still debated today when mosaics have been excavated: to rebury them; to conserve them *in situ*; or to detach them and transfer them to a museum"; ICCROM 1983, 15-16; Michaelides 2004, 34.
[48] Zevi 1998, 22-24.
[49] Zevi 1998, 24.

archaeologists and conservators at Pompeii and therefore reburial has not been implemented on any of the pavements. A further discussion of reburial as a preservation technique will be included in the next chapter.

The option for mosaic conservation which is most respectful to Pompeii's original context is also the most dangerous for the mosaics. While leaving mosaics in situ without re-covering them with earth will make the mosaics visible and available to visitors; according to ICCROM, "This solution will inevitably involve destruction of the mosaic within a short time. It should therefore be avoided." Leaving the mosaics in situ does not necessarily mean that they should not be treated in some way. The only way to protect the mosaics, if they have been left uncovered and in situ is to "Provide regular, appropriate maintenance."[50] The constant maintenance falls more into the category of preservation but the mosaics must first be prepared for such continuous treatment. This preparation, often called consolidation, requires that the mosaics be thoroughly and aggressively cleaned, which is best achieved chemically through the use of such diluted compounds as AB57.[51]

After cleaning, all of the broken edges and lacunae should be consolidated by recreating the missing portions out of lime mortar similar to the kind that was used in the original construction of the mosaic. Only by understanding the composition of the ancient mortar construction layers, is it possible to conserve and protect them. The mortars used in modern conservation to fix the deteriorating construction layers or fill in lacunae must be consistent with the composition of the ancient mortar in order to prevent deteriorative reactions.[52] The results of Giudisce's study have such implications for the conservation of the Tragic Mask mosaic. Having determined the types of mortars through infrared and Raman spectroscopy,[53] the lacunae were first consolidated with an ethyl silicate, which aids in the binding of the mortars, preventing further deterioration. Finally, they were filled with a neutral-colored, lime mortar which would not react negatively with original mortars and "would not interfere too much with the reading of

[50] ICCROM 1983, 19.
[51] According to Susan Buys (1993, 78), AB57 is an ammonium-bicarbonate/sodium-bicarbonate solution which is used to remove deposits from the surface of artifacts; in particular, AB57 was used for the cleaning of the Tragic Mask mosaic (Giudisce 2002, 173).
[52] Modern cement was used in consolidation until it was determined that it was damaging to the original construction layers (ICCROM 1983, 16).
[53] Giudisce 2002, 171.

the image."[54] This method of conservation can be seen in several of the remaining in situ mosaics at Pompeii, particularly in the House of the Menander. A large section of the Symplegma mosaic was already damaged when it was discovered.[55] Currently, one can see only portions of the original scene as the rest of the mosaic has been filled in with mortar (fig. 3.1). This is not only a protective measure, but also allows for both the understanding of the mosaic's original context and its current role as part of the excavated remains.

Consolidation also attends to the many destructive concerns which must be dealt with in order to protect the mosaics. According to Jukka Jokilehto, "In almost all climates, by far the greatest single factor in distress to [archaeological remains] is water in one form or another."[56] For mosaics, this comes in the form of both groundwater and rain. The rising and falling level of the water table, as well as the changes in water temperature, have extremely detrimental effects on the mosaics. "Thermal movements in cement mortar masonry (which in terms of mosaics are its cement construction layers) can cause brittle cracking which often leads to surface spalling."[57] Jokilehto also reminds us that "rain is usually a weak cocktail of acids, some due to fixation of atmospheric elements and others due to pollution in the atmosphere." The mosaics at Pompeii were fortunate to have been protected from rain by their burial under the ash and pumice. Along with severe weather, keeping mosaics in situ exposes them to further deteriorative elements. These effects were noticed at Pompeii even in the 19th century. In a report given by Rafaelle D'Ambra[58] to the Commission of the Council of Civil Buildings, he identified the destructive tendencies of nature. He wrote, "The bases of the walls, still left exposed, collected waves of water and seeds that the vegetation and water vapor, along with the weight have caused cracks, fissures, movements and ruins."[59] The 19th century Italian landscape architect Ercole Silva also noticed that, "nature takes its revenge and, through the assaults of vegetation, re-conquers what man has built."[60] This assault can be seen throughout Pompeii, particularly where the emblemata have been removed and the plant growth breaks through the construction layers that are still in

[54] Giudisce 2002, 173.
[55] Maiuri 1933, 85.
[56] Jokilehto 2007, 12.
[57] Jokilehto 2007, 21.
[58] According to Pagano (1994, 185), "D'Ambra was in charge of writing the relative relation to the excavations at Pompeii and to propose the relative reforms."
[59] Pagano 1994, 186.
[60] Silva 1801.

situ (fig. 1.2). While the consolidation of the mosaics stops and can even reverse these deteriorative effects, only further preservation can "combat the proliferation of algae, lichens, moss and other plants."[61] Such biological colonization is a major factor for the chemical and physical deterioration of mosaics and humid environments are their breeding grounds. While several studies have identified the strains of growth that effect mosaics at certain sites and the biocides to counteract them, they are site specific and there has not been a study attempted at Pompeii.[62] Although leaving the mosaics in situ and uncovered is the most risky of the three solutions, it is the most appropriate for a site with such a high volume of tourist traffic such as Pompeii.

Another method of treating the mosaics in situ without reburial is through the process of lifting and replacing.[63] Although this method destroys the construction layers of the mosaics, it helps protect the upper, decorative layer from underground water damage and plant growth and can also be used to enhance the mosaics' presentation. One argument supporting this method suggests that lifting and re-laying can make more information, particularly about the construction layers, about the mosaic available to scholars.[64] However, Vaccaro notes that "the argument is a false one, because the same amount of information can be obtained without removing the mosaic, by taking advantage of losses and discontinuity of the surface to carry out investigations."[65] Only once has this method been implemented at Pompeii; althought it is not clear whether or not it was done with conservation in mind. According to Fiorelli's excavation reports, the Theseus and the Minotaur mosaic from the House of the Labyrinth was removed, and then replaced a few days later. Lacunae in the mosaic were consolidated and it is possible that the mosaic was removed for this purpose, although the excavation reports are silent on that issue. Removal and replacement damages the construction layers as much as permanent removal, but it is clear that the construction layers of all of the other in situ mosaics are intact, based on visual and spectroscopic analyses.[66] Also, a derivation of this process was implemented with two mosaics in the House of the Faun. The two mosaics, the Alexander mosaic and an opus

[61] ICCROM 1983, 19.
[62] Both Miceli (2004) and Not (2004) examine biodeterioration at Piazza Armerina, Mozia, and Selinunte in Sicily, and the latter also studied it at Solunto.
[63] Johnson 1980, 367.
[64] Chantriaux-Vicard 1994, 87-92.
[65] Vaccaro 2003, 18.
[66] Giudisce 2002, 171-173.

tessellatum figural mosaic were removed soon after they were discovered. Over 150 years later, reproductions of the original mosaics were made and replaced in situ. The reproduction aspect of this will be discussed in chapter 4.

The decision about whether to lift or conserve a mosaic should be determined on an individual basis after an assessment of the condition and environment of the mosaic. Insight into the decision-making process for the removal of a mosaic from Pompeii can be found in Ardovino's study on the Alexander mosaic. Ardovino was not only able to survey the state of preservation of the Alexander mosaic as of 2000, but was able to learn the history of the dialogue concerning how to study and preserve it. According to Ardovino, the decision was an ideological one between two different theories. The change from the traditional removal of the mosaics at Pompeii to the idea of in situ preservation can be seen in the debate about the Alexander mosaic. Because of the mosaic's remarkable quality, iconography and state of preservation, it became famous immediately after it was excavated in 1831.[67] Such a remarkable example was treated conscientiously by the archaeologists and Soprintendenza. Many drawings of the mosaic were made during excavation and in the 12 years between its excavation and its removal (fig. 3.2).

Current conservation practices follow the tenet that "[excavated remains] are immediately recognized as monuments, treated as cultural objects, studied and conserved with due consideration for the historic, artistic and documentary value they bear."[68] By this standard, Pompeii's mosaics are more than just artistic treasures recovered from a buried city, they are lenses through which people are able to better understand Pompeii's history and culture, as well as its art. Therefore, as the ICOMOS training guidelines say, "conservation must respect the cultural context."[69] The context debate brought up by Zevi's insightful statement in the first chapter is essentially an answer to a question about how artifacts can best be understood. When left in situ, the artifact becomes a part of a whole and another element in the understanding a specific context, a specific structure, or an entire culture. When it is removed to a museum, it can be studied for its inherent artistic values, but those are not always homogeneous with the mosaic's contextual importance.

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[67] Ardovino 2002a, 34.
[68] Rizzi 2007, xxi.
[69] ICOMOS 1993, 1.

In terms of mosaic conservation, the decision to pursue in situ treatment is considered "the best alternative, a position supported by international charters and recommendations. These charters reflect the evolution of theoretical thinking and practice as they have expanded beyond the artifact to emphasize context. Context is now included as an essential element for the preservation of the historical, physical and cultural values of cultural heritage."[70] The Burra charter of 1979 states in Article 9 that, "A building or work should remain in its historical location. The moving of all or part of a building or work is unacceptable unless this is the sole means of ensuring its survival."[71] The opposing position of this argument deals mostly with the fact that mosaics which are left in situ are likely to be affected by the aforementioned destructive influences such as weather and natural growth. However, with the development of newer and more effective excavation and in situ conservation and preservation techniques, these mosaics can survive safely in their original context.

Unfortunately, as with the excavation of Pompeian mosaics, published records concerning the treatment of excavated mosaics are very sparse. According to Jokilehto, "Recording is an essential part of the conservation process in order to get to know the [place] concerned and its physical condition, and subsequently to monitor any changes over time."[72] Without knowing the way that the mosaics were treated in the past can even be dangerous to their preservation. The only truly conservation-focused study of an opus vermiculatum mosaic from Pompeii is Giudisce's study on the in situ Tragic Mask mosaic from the House of Ma. Castricius. According to the study, the mosaic is protected from harsh weather by its location in the interior of the house but is exposed to dangerous humidity. The effect of the humidity "is verified by the phenomenological result of degradation characterized by the deterioration of the mortar, the decohesion and superficial abrasion of the tesserae."[73] Fortunately, not many of the tesserae have been lost. However, about 40% of the surface has suffered some sort of abrasion or fracture of the tesserae and it is likely that the mosaic was "submitted in the past to a very

[70] Vaccaro 2003, 17.
[71] Australia ICOMOS, International Council on Monuments and Sites, C*harter for the Conservation of Places of Cultural Significance (The Burra Charter)*, 1979.
[72] Jokilehto 2007, 7.
[73] Giudisce 2002, 172.

aggressive cleaning, which could have accentuated the phenomena of abrasion and degradation."[74]

Many of the archaeologists who excavated Pompeii before Spinazzola pursued only one conservation technique for the discovered opus vermiculatum mosaics. And while removal is still a recognized method for conservation, it is now considered a last resort because it does not preserve the mosaics' original context and it destroys their construction layers. However, the methods of the previous archaeologists may have helped save the mosaics, since, at the time, in situ conservation was not fully developed. Zevi wrote that it is only "with hindsight that one can recognize that the mosaics' removal was the only possible solution, and well-deserving at that."[75] It is not possible to determine for certain whether or not the mosaics' were removed with their protection in mind since most of the records do not discuss these decisions. Only the results can be seen and interpreted. The same is true for the opus vermiculatum mosaics discovered and conserved in situ by Spinazzola. It is possible now, through various spectroscopic techniques, to see that the mosaics were vigorously cleaned but left exposed to destructive natural elements. In order to repair the mistakes of the past, modern conservators should chemically treat the in situ mosaics and use contemporary consolidation methods.[76] The best overall strategy for conserving in situ the opus vermiculatum mosaics in Pompeii is the aggressive cleaning of the mosaics including the elimination of biological elements, the consolidation of the lacunae (after examination of the construction layers), and the implementation of preservation programs because as important as intervention is to the survival of the mosaics, it is not effective without a long-term plan.

[74] Giudisce 2002, 172.
[75] Zevi 1998, 22-24.
[76] Giudisce 2002, 173.

CHAPTER 4

PRESERVATION

While conservation in some manner is essential in order to prevent deterioration, conservation without preservation, that is to say frequent maintenance, will not protect the mosaics forever. In this chapter, I discuss the need for long-term maintenance programs for Pompeii's opus vermiculatum mosaics and place this need within the context of modern preservation ideology. Furthermore, I intend to examine how the historical techniques of preservation at Pompeii have affected both the physical and contextual integrity of the mosaics, and to determine whether or not current preservation theory can provide a solution to the challenge of preserving Pompeii's in situ opus vermiculatum mosaics within their unique archaeological setting.

The preservation of exposed archaeological remains has been an issue at Pompeii since excavations began in 1748. It is possible that the original owners of the mosaics appreciated their fragility and performed some degree of maintenance. The preservation of Pompeii's opus vermiculatum mosaics does not only concern their physical protection, but also the protection of their original context and inherent patrimony. In 1755, the king of Naples became aware of the need for protecting excavated antiquities and implemented legislation that would prevent the unauthorized exportation of these antiquities. However, as Jokilehto noticed, this protection was given only to those antiquities that were removed and deemed precious. The legislation did not take into account the preservation of the excavated buildings or sites.[1] Two hundred years later, the United Nations Educational, Scientific and Cultural Organization (UNESCO) made further recommendations concerning the principles of site conservation and preservation. The most relevant section of UNESCO's 1956 "Recommendation to Member States on International Principles Applicable to Archaeological Excavations" asserts that excavation should "provide for guarding, maintenance, and restoration of the site together with the conservation, during and on completion of [the] work, of objects and monuments uncovered."[2]

[1] Jokilehto 1999, 57.
[2] UNESCO 1957, 43.

The fate of the opus vermiculatum mosaics or fragments since their discovery can be divided according to how they have been treated: in situ, transferred, illicitly removed, or destroyed (fig. 4.1). Two commonly used methods for in situ mosaic preservation are sheltering and reburial. Research and practice have proven the effectiveness of these methods in protecting mosaics from the devastating effects caused by nature, tourism, and other outside forces. However, both sheltering and reburial alter the overall appearance of the site by adding features that were not part of the original, ancient environment. It is likely for this reason that the mosaics left in situ at Pompeii are not currently protected with either of these two methods. Because many of the opus vermiculatum mosaics were removed shortly after their excavation, this discussion must be divided between the state and processes of preservation of the in situ mosaics, and those of the removed mosaics. The discussion of the former will focus on the validity of the aforementioned forms of preservation for protecting the in situ mosaics as well as the factors that necessitate and inhibit the mosaics' preservation. The latter will be discussed in terms of the history and use of removal as a preservation technique at Pompeii.

Along with the need for conservation, the preservation of Pompeii's opus vermiculatum mosaics became a concern the moment the first one was uncovered. While the decisions to leave the mosaics in situ or remove them to the museum were the responsibility of the archaeologists who uncovered them, the implications of such decisions can still be felt. The mosaics that remain in situ are in far more danger of deterioration than the others. Unlike conservation, preservation is a long-term issue, and as Vaccaro notes, "the main obstacles preventing successful adoption of conservation *in situ* are the lack of management plans and of adequate resources for on-going maintenance programs."[3] These maintenance programs are necessitated by the various deteriorative forces than can accumulate over time. Plant growth and other biological elements are only temporarily removed through conservation and must often be managed, especially for in situ mosaics.

Even seemingly innocuous debris such as dust and small pebbles can be detrimental to the safety of the mosaics. By getting into cracks in the mosaic, they can dislodge tesserae and in opus vermiculatum mosaics, where the tesserae are placed so close together, the displacement of

[3] Vaccaro 2003, 22.

just a few tesserae can increase exponentially in even a short time.[4] Vigilance is required to counteract this damage. Jacques Neguer's statistical analysis of the vulnerability of in situ, exposed mosaics backs up the need for continuous maintenance. His results show that of 100 archaeological sites with mosaics in Israel, "The lack of monitoring and maintenance is one of the main deterioration factors in 98% of the cases."[5] At least two other major site evaluations have been carried out on this subject. For archaeological sites in Italy, unfortunately not including Pompeii or any of the Vesuvian cities, the Ministero per I Beni Culturali e Ambientali and the Istituto Centrale del Restauro have developed a *Carta del Rischio del patrimonio culturale italiano*,[6] and for sites in England, the Royal Commission on the Historical Monuments of England has produced the MARS (*Monuments at Risk Survey)* Project to "provide up to date information regarding the general characteristics of the archaeological resources as well as specific details about the past, present, and likely future conditions of various kinds of monuments."[7] These risk maps are an excellent way to study the condition of archaeological remains and how they are affected by their natural and constructed environments. Pompeii would certainly be served well if the maps were applied at the site.

Another of the destructive elements that must be controlled in order to protect the mosaics is tourism. The high level of tourism and its effect on the preservation of the site is a significant problem that has been identified by several scholars. John Ashurst cites Pompeii as a specific example of the ruinous effects of tourism by saying, "The seriousness of the problem may be seen at such important sites as Pompeii, which has to contend with a phenomenal amount of foot traffic." He also presents some suggestions as to how to resolve the situation. He notes, "Problems of wear associated with the modern tourist industry must inevitably lead to restricted circulation and covering of valuable areas, however unpopular this may be."[8] This leads to the question of what compromises must be made in order to successfully preserve Pompeii's in situ opus vermiculatum mosaics. Pompeii's extraordinary state of preservation from its burial by the eruption of Mt. Vesuvius has made it a virtual "city-museum, a unique place of knowledge about

[4] Roby 2006b, 106.
[5] Neguer 2004, 534.
[6] Bianchi 1998, 527-536.
[7] Vaccaro 2003, 22 n. 18.
[8] Ashurst 1990, 2:34.

the life of the ancients."[9] Currently at Pompeii, there are two ways in which the in situ opus vermiculatum mosaics are protected from the ravages of the tourists. In the House of Paquius Proculus, a raised walking platform was erected to prevent tourists from walking on the mosaics while still allowing them to view the unique atrium pavement (fig. 4.2). However, since the pavement encompasses the entire floor of the atrium, the beams of the platform rest directly on top of the mosaic, which is detrimental to its preservation. The other in situ mosaics, specifically those in the House of the Tragic Poet (VI.8.3) and the House of the Menander are protected by small wooden gates at the entrance to the rooms in which they are situated (fig. 4.3). This may deter visitors from walking on the mosaics, but it is not foolproof and determined tourists could easily make their way past the gates and onto the mosaics. However, identifying the problem is much simpler than finding a solution. Obviously, tourists should not be allowed into the rooms with the mosaics, and solutions vary from minimalist, with a simple but less effective sign or rope line, to more elaborate methods, such as translucent barriers in the doorways similar to those successfully used to protect the painted Etruscan tombs at the Monterozzi necropolis in Tarquinia.

While the original function of the mosaics was a walking surface, according to the ICCROM *Safeguards*, using the ancient pavements in this way "is best avoided because of the pavement's often fragile state. Walking on a pavement produces a slow but inexorable wearing away of the surface. This, combined with the mechanical effect of foot traffic following always the same path, leads inevitably to the destruction of the work of art in the long run."[10] The mosaics can never be returned completely to their original state and function since they have been affected by the eruption and their time trapped beneath the ash, pumice and soil. Therefore, they should be preserved as they are which highlights their transformation from functional pavement to artistic artifact and architectural ruin. "The mosaic will thus retain the natural aspect of its present state of preservation."[11]

According to Catherine Woolfit, "Experience has shown that exposure without protection or intervention generally has disastrous consequences for building fabric and that the natural forces, which quickly set to work, are almost always destructive to some degree and in some

[9] Pagano 1994, 174.
[10] ICCROM 1983, 11.
[11] ICCROM 1983, 12.

form."[12] One of the more widely discussed contemporary preservation techniques, especially for the protection of mosaic pavements, is reburial. At Pompeii, reburial was used during the earlier excavations when the idea of presenting the unified site was not yet being pursued. However, since Pompeii has become one of the most visited and most recognizable ancient tourist destinations, it is virtually impossible to justify the reburial and concealment of excavated remains such as the mosaics, no matter how effective it is. Unfortunately, although reburial is, as Nicholas Stanley-Price put it, "a much less glamorous field than restoration and reconstruction, [it is] an essential one if one is to be responsible about the archaeological record."[13]

The effectiveness of reburial, and indeed all modern preservation practices, is another concern which must be addressed when determining the best methods of preservation. Since many of these methods are so new, their long-term effectiveness has not yet been understood. The scientifically and synthetically created solutions such as geotextiles have not been tested extensively for long-term viability. Still, reburial is given its due consideration. Ideas have been offered regarding reburial of some of the in situ mosaics and leaving others for display, or creating a plan for a rotating schedule of reburial and display.[14] This was first proposed by Michele Arditi in 1811 when he suggested the protection of mosaic pavements during the winter season when Pompeii was not being excavated. In his regulations "For the direction of the excavations of the city of Pompeii," he recommended that "mosaic pavements be covered with lapilli in the winter."[15] There is no record of this proposal being employed, but forty years later Guglielmo Bechi, the director of works at Pompeii from 1851-1852, said that "with light expense instead they could have covered the buildings with roofs, as is seen with successful practice in some houses, and like this they could have guaranteed entirely to preserve them for a long time, without being subjected in every change of season to cover the pavements with *lapilli*, which suffer greater damage each time the *lapilli* are removed."[16] This suggests that the lapilli were used for preservation and that they were determined to be more harmful than helpful. Also, as Francesca Piqué notes, "every time we uncover something and the condition changes, that is the

[12] Woolfit 2007, 147.
[13] Stanley-Price 2003, 273.
[14] Margalit 2003, 299-300.
[15] Pagano 1994, 172.
[16] Pagano 1994, 188.

most drastic situation and that is when causes of deterioration occur."[17] The constant reburying and uncovering of the mosaics would probably have more of a destructive result than attempting to preserve them in situ and uncovered.[18] Since reburial is not much of an option at Pompeii, another way must be found to adhere to archaeological and preservation charters, which say, according to Stanley-Price, "that excavated remains should not be left exposed unless maintenance and protection can be guaranteed."[19] If the primary idea is to leave the mosaics in situ in order to maintain the context, but the mosaics cannot be preserved in situ, then one or the other must be sacrificed.

The development of preservation practices increasingly reduces the need to remove the archaeological remains. If reburial is the preservation technique with the longest history at Pompeii, then restoration and sheltering has the second longest. In the 18th century, many of the architectural characteristics that were destroyed by the earthquake and the volcanic eruption were replaced by wooden replicas which, according to Mario Pagano, "supported the overhanging structures, and also replaced some architectonic and decorative elements."[20] These were early solutions that successfully prevented the further collapse of many walls and arches in the city. In 1771, the House of the Surgeon (VI.1.10) became one of the first in Pompeii to have tile coverings built on top of their exposed walls. Pagano cites this as an early attempt to "preserve and take care of the ancient paintings in place."[21]

While restoration and reconstruction did begin at the site in the 18th century, it was not until the French period in the beginning of the 19th century that large scale initiatives for restoration of the edifices were enacted. After seeing his restoration work at other sites, architect Antonia Bonucci was brought to Pompeii under the title of Architectural Director of the Excavations of Pompeii.[22] Although Bonucci was the director, it was Caroline Murat, the Queen of Naples at the time, who brought innovative ideas and insight into the excavation and preservation processes. In an 1812 letter to the Minister of the Interior from Queen Murat, she noted that, "The ruins which demand great attention are not being maintained and are wasting

[17] Margalit 2003, 301.
[18] A more specific study on possible destructive results of continuous excavation and reburial is Podany 1994, 1-13.
[19] Stanley-Price 2003, 274.
[20] Pagano 1994, 169.
[21] Pagano 1994, 169.
[22] Pagano 1994, 170.

away these days, while one excavates, one sees falling from another that which one should preserve with more care."[23] Her insights into the immediate need for preservation and reconstruction were already recognized by Arditi. In his 1811 regulations, he repeatedly mentioned the need for tile and beams "in order to cover immediately those edifices which are able to hold the weight and which merit the expense." His plan was to build roofs atop structurally stable buildings which contain precious wall paintings and mosaic floors.

During the tenure of Vittorio Spinazzola, and subsequently Amedeo Maiuri, more artificial roofs were constructed on several of the excavated houses. However, the roofs were constructed more for aesthetic purposes than preservation. This is evident by the fact that most of the roofs constructed over atria of certain houses retain the compluvium (fig. 4.4). The idea of sheltering archaeological remains is another highly debated topic. While sheltering does provide a measure of protection from harmful, deteriorating elements, it can also intensify destructive forces created by the enclosures such as the greenhouse effect. The effects of sheltering mosaics and possible solutions to the problems have been studied extensively through their use at Piazza Armerina.[24] While the roofs built at Pompeii are not exactly the same as those at Piazza Armerina, they have a similar effect on the mosaics. Also, it was determined that the enclosure at Piazza Armerina, which was believed to be permanent, turned out to be damaging to the remains. According to Stanley-Price, "Forty years later, its removal has already taken place because of the damage it has caused to the archaeological remains."[25]

While the damage that Stanley-Price describes is physical, it can also be interpreted as damaging to the appearance and unique archaeological landscape of site. Rizzi acknowledges this, stating, "a modern shelter turn[s] the site into a museum and los[es] forever its outstanding urban value."[26] The same problem can easily be recognized at Pompeii. The 10 opus vermiculatum mosaics that remain in situ, along with many of the other, less decorative pavements, are given a degree of protection by these roofs but, while the roofs have been made to be relatively inconspicuous by the use of wooden posts and tiles, they are not as effective as the large-scale, modern enclosures. These enclosures have not been employed at Pompeii

[23] Pagano 1994, 170; The actual letter is preserved in Arch. di Stato di Napoli, Min. Interni, I Inv., FS. 1007.
[24] According to Stanley-Price and Ponti (2003, 278), air-conditioning of the enclosures was proposed, but there was not enough money to do this.
[25] Stanley-Price 2003, 276.
[26] Rizzi 2007, xxii.

because the goal of the excavations, starting under the tenure of Fiorelli was to "recreate a unified urban whole."[27] This was a seemingly ambitious task and he therefore focused all of his effort on that instead of attempting to preserve any of the already uncovered portions. His aim was the discovery of the site and the artifacts which thus left the site open to deterioration. If one of the more modern shelters were built on any of the houses at Pompeii, the landscape will be marred. Stanley-Price cites the House of Theseus at Paphos, Cyprus, as an example of a modern, high-tech shelter built to protect an opus vermiculatum mosaic (fig. 4.5).[28] Apparently, the aim of the Paphos shelter was to "develop an inexpensive modular design constructed of lightweight materials, easily transported and erected, and requiring no penetration of the soil."[29] This did not take into consideration the panorama of the site or the fact that such a modern shelter would appear inconsistent and very out of place against the aesthetics of the ancient mosaic. The application of such a shelter at Pompeii would be even more inappropriate since many of Pompeii's walls are still preserved and a high-tech, modern shelter would ruin the iconic appearance of the site.

One final suggestion for preserving the mosaics in situ is a form of sheltered protection which is less intrusive to the Pompeian backdrop than the large scale shelters that have been implemented at sites such as Piazza Armerina and discussed above. One example of the more consolidated enclosure, which focuses only on the emblema, can be seen at Pompeii. The Nile mosaic (cat. 8) remains in situ in the House of Paquius Proculus and has been surrounded by a wooden box with a translucent cover (fig. 4.6). The mosaic is in an interesting situation because it is the only opus vermiculatum emblema at Pompeii which is not set into a larger pavement of opus tessellatum but of undecorated opus signinum. Therefore, the enclosure does not affect the surrounding pavement. It is a simple solution to the problem of outside influences such as water and debris, but has the same humidity problems as the large scale shelters. There are also visibility problems with the small enclosure. Visitors are not generally allowed inside the triclinium where the mosaic resides and therefore the mosaic is very difficult to see; especially considering that the humidity inside the enclosure and dust on the surface clouds the glass cover

[27] Berry (1998, 7) says that although Fiorelli's system of excavation had a profound impact on Pompeii, he still resorted to removing and transporting architectural artifacts, such as wall paintings, to the Naples Museum.
[28] Stanley-Price 2003, 277-8.
[29] Stanley-Price 2003, 277.

(fig. 4.7). This resolution compromises visibility for protection instead of balancing these two issues.

While sheltering and reburial may be acceptable solutions for the preservation of the mosaics at such sites like Piazza Armerina, preserving Pompeii as an entire ancient city is difficult because of its size. Also, as Judith Harris mentions, "No less than any other fragile heritage site, Pompeii remains at risk…maintenance of the sixty-six acres of buildings already brought to light-some first excavated two centuries ago and open to the elements ever since-remains a daunting task."[30] And this task becomes exceedingly overwhelming as Pompeii continues to be excavated and remains continue to be exposed. Therefore, the history of the preservation of Pompeii's opus vermiculatum mosaics has focused on the individual mosaics and not the site itself. For this reason, removal of the mosaics was a standard practice at Pompeii for 150 years. According to Bechi, the removal of artifacts is a "strange idea which has been adopted by those who do not have an intense love of art, but only that they may form a continuous monopoly on those excavations, spending exorbitant sums for the transport of those ancient objects."[31] Also, as reported by Woolfit, "It has been common practice in many places to leave architectural remains on archaeological sites exposed with minimal or no intervention after excavation, once the valuable data and portable artefacts have been extracted."[32] Therefore, one of the questions is how a balance can be found between protecting the mosaics and making them available to the public. Unfortunately, it is not simple. If it were, removal would be a perfectly viable option. It increases the possibility for long-term preservation and makes the mosaics very available to the public. As we have seen, however, removal of the mosaics virtually destroys their context.

Preservation of Context

The value of Pompeii's opus vermiculatum mosaics exceeds that of works of art and architectural remains. While this value is not totally dependent on the mosaics remaining in situ, as Roby says, "If the lifted mosaic is removed from its original location on site, then the integrity

[30] Harris 2007, 7.
[31] Pagano 1994, 188.
[32] Woolfit 2007, 147.

and therefore the value of the site is diminished."[33] The mosaic's integrity can be divided between physical and abstract terms, both of which are damaged when the mosaic is removed from its original location. The physical integrity refers to both the mosaic's entire original composition, including the construction layers, and the mosaic's placement within the original building in Pompeii. When the mosaic is separated from this context, both the construction layers and the decorative surface are stripped of their inherent architectural context. The abstract integrity is the mosaic's cultural and historical value which is represented by its extravagant style and specific placement within its house in Pompeii, and according to Roberto Nardi, keeping the mosaics in situ "means respecting and preserving all the cultural valences of the monument, including historical, technical, and material ones."[34] The abstract integrity is just as fragile and susceptible to ruin as the mosaic itself and is also lost through the mosaic's removal.

Tom Roby has further insight into the debate of whether or not to remove the mosaic. He writes, "The reasons for deciding whether to conserve a mosaic in situ or to detach or remove it from the site are both ethical and technical."[35] The ethical argument concerns the debate of what is more important, the mosaic itself, or the context to which the mosaic belongs. If preservation in situ cannot be guaranteed forever, as in Pompeii, is it better to leave the mosaic in situ for as long as possible or, as Rizzi says about Herculaneum's similar situation, "to detach and display elsewhere the decorative apparatus (the mosaic) that cannot survive unprotected, denying the special quality that Herculaneum possesses and losing at once what the eruption miraculously preserved?"[36] Ardovino's previously mentioned study on the Alexander mosaic focuses on the ethical and technical debate. One side argued that the "*Grande Musaico Pompeiano,*" as it was called when it was discovered, should be preserved in situ along with all of the other remains of the House of the Faun in order to preserve the house as an in situ *musealization*, *ante litteram.*[37] Those on the other side of the debate, the side that won out, believed that the mosaic was not safe in situ and cited, among other reasons, the destructive problem of humidity which was the major,

[33] Roby 2006b, 101.
[34] Nardi 1997, 14.
[35] Roby 2006b, 101.
[36] Rizzi 2007, xxii.
[37] Ardovino 2002a, 36.

unsolved preoccupation of the "conservators" during the 12 years between its excavation and its removal. Thus, in 1843, the mosaic was removed to the National Museum.[38]

The importance of the context of the mosaics has become increasingly an issue since the early Pompeian excavations. Vaccaro noticed this and wrote that, "Context is now included as an essential element of the preservation of the historical, physical and cultural values of cultural heritage."[39] Among Pompeii's unique features is its ability to function as a window to the past and the most important aspect of the site's context is its ability to enrich the understanding and appreciation of history and culture. Winston Churchill once said that "the farther back you can look, the farther forward you are likely to see."[40] If remains like these mosaics are removed from their context, one can only look back at an incomplete version of history. The fact that Pompeii is so accessible to the public is one of the qualities that make the site so extraordinary. The opportunity to see Pompeii's preserved ruins is dramatically decreased if such important works of architectural art like the mosaics and wall paintings are removed. Vaccaro believes that, "preservation *in situ*, emphasizing the conservation of the context, should be the rule for mosaics in areas permanently open to the public."[41] This should be the standard approach since most of the tourists visit Pompeii in order to see the unique character of the entire site, not individual objects, and the preservation of context is the only way to ensure this.

While preservation techniques such as reburial, sheltering, and even removal help to protect the mosaics from further destruction and deterioration, it is still the destructive elements and situations that cannot be predicted which may cause the most damage. Unpredictable natural disasters such as earthquakes can cause irreparable damage to the mosaics.[42] The devastation caused by World War II also affected Pompeii. Aerial bombardments in the summer of 1943 wreaked havoc at the site, destroying several of the structures which had been excavated.[43] Fortunately, none of the houses with opus vermiculatum mosaics were harmed.

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[38] Ardovino 2002a, 34.
[39] Vaccaro 2003, 17.
[40] Hosmer 1981, 1074.
[41] Vaccaro 2003, 21.
[42] Several earthquakes hit Southern Italy in the 2nd millennium C.E. including several between the 17th and 20th centuries that shook the area around Naples and Mt. Vesuvius (particularly violent were those in 1638 and 1857). Mt. Vesuvius also erupted again in 1631 causing nearly as much devastation in the area as the 79 C.E. eruption (Braccini, G.C. 1632. *Dell'incendio fattosi nel Vesuvio a XVI di dicembre MDCXXXI e delle sue cause ed effetti.* Naples: Roncaglioli).
[43] Spinazzola 1953, XIX-XXXI.

Since the preservation of context can often conflict with the conservation and preservation of the mosaics, and there are no guarantees that the mosaics will be safe either in situ or after they have been removed, it is vital to keep detailed records of the remains. The Lion mosaic from the House of the Faun was left in situ because of its poor state of preservation upon discovery. Eventually it was lost to deterioration and is known only through a drawing made at the time of its discovery. Also, as was mentioned earlier, one of the mosaics disappeared from the archaeological record, having been somehow stolen. Therefore, documentation becomes an essential method of preserving historical details. If the mosaic is unable to survive, its legacy can be secured through drawings and photography. For this reason, the authenticity of the mosaics and the context must be retained as close to the original as possible. Although documentation should be incorporated into the overall preservation program, even some recent scholarship has made it an isolated priority, not in conjunction with other preservation techniques. According to the introduction to *Unpeeling Pompeii*, the 1998 exhibition of regio I "[came] out of a project of international collaboration by scholars concerned by this threat to Pompeii, convinced of the importance of recording, studying and interpreting the precious evidence that has already been exposed before it crumbles."[44] It is certainly important to document the excavated remains for further study and interpretation, but this does not allow the remains to be condemned to deterioration as the previous quote suggests.

The preservation of context has vital implications to the way that the in situ mosaics are presented to the public. Visitors to the Vesuvian archaeological sites have been amazed by their relative completeness and exceptional state of preservation since their discovery in the 18th century. Even as early as 1740, when very little had been uncovered, visitors were entranced by the unique presentation of the sites. One visitor, Horace Walpole, described Herculaneum to his friend Richard West saying, "One hates writing descriptions that are to be found in every book of travels; but we have seen something today that I am sure you have never read of, and perhaps never heard of. Have you ever heard of the subterranean town? A whole Roman town with all its edifices remaining underground?"[45] The archaeological site of Pompeii has been open to visitors since excavation began in the mid-18th century. Originally, visitation was limited to the royal patrons, and their acquaintances. Not even Winckelmann, who was the Chief

[44] Berry 1998, 3.
[45] Letter to Richard West, 16 April 1740, in Lewis 1948.

Commissioner of Antiquities in Rome, was allowed to visit the excavations without express permission. Winckelmann reported that, in the late 18th century, when more visitors were allowed to enter the site, "strangers, particularly travelers, who [could] take a cursory view of these works, wish that all the rubbish was entirely removed, so as to give them an opportunity of seeing…the inside of the whole subterraneous city."[46] Pompeii can be considered a "city-museum,"[47] which means that under optimal conditions, the site could essentially be a self-contained museum. In fact, the site itself is more effective for the dispersal of knowledge about the culture and society of Pompeii than the individual, "museum worthy" artifacts that were removed from the site and are displayed in the National Museum.

The ability to successfully preserve all of the discoveries at Pompeii in situ has not yet been attained and therefore the site cannot reach its potential as a completely self-contained museum. The site is still dependent on the National Museum to display and protect the more precious artifacts. However, the site and the museum both have the same goal: to effectively preserve and display the discoveries of Pompeii so that future generations may learn about Roman culture and society through the lens of the uniquely preserved city. While the goal may be the same, the results do not demonstrate its success. The site of Pompeii is able to convey a relatively solid contextual map of life in a Roman city which allows for the understanding of the many dichotomies of the city such as plebian versus elite, architectural vs. artistic, secular vs. non-secular, etc. However, because of the removal of many of the artifacts and precious architectural remains, such as the opus vermiculatum mosaics, the site has become significantly less complete since the first trenches were opened by Alcubierre. While the National Museum does preserve and present the mosaics, it does not counteract the damage done through the mosaics' removal. Although the museum contains the absent mosaics, they are not able to complete the site's contextual puzzle because individually, the mosaics have a different meaning that is separate from the site's context.

One of the major arguments against the presentation of ancient mosaics in a museum setting is the fact that not only are they detached from their architectural context, but they are unnaturally placed on the walls of the museum. While this may be done for better visibility, as Jerry Podany mentions, certainly "the primacy of painting in the world of collecting forced

[46] Winckelmann 1771, 24.
[47] Pagano 1994, 174.

mosaics from the floor and onto the wall, and this shift from the horizontal to the vertical[…]imposed on the viewer a vantage point completely foreign to the original presentation of the mosaic."[48] When some of the mosaics were first brought to the National Museum, they were originally installed as part of the floors of the museum. This practice began in the early days of the Portici Museum and already in 1768, the first 14 rooms of the museum were paved with ancient mosaic and opus sectile pavements.[49] Two of the detached opus vermiculatum mosaics, the Lion mosaic from the House of the Centaur and the Alexander mosaic, were also first set into the floor of the museum. They were protected from the damaging feet of the visitors by a wrought-iron barrier (fig. 4.8). This attempt to preserve at least the identity of the mosaics as pavements was unsuccessful in the face of the view that the mosaics were detachable archaeological artifacts similar to paintings, and the mosaic was eventually repositioned onto a wall.[50] Also, the dynamic nature of the museum and the influx of artifacts due to the continuous excavations meant that placing the mosaics on the walls conserved valuable space in the museum. The preservation of the mosaics' physical integrity and the danger of damage from visitor foot traffic was likely further motivation for moving the mosaics from the floor of the museum.

Keeping the mosaics in situ has additional benefits other than preserving their context. The treatment of the mosaics also relates to the Pompeii's tradition as exciting and educational for visitors. The fact that Pompeii is still an active archaeological excavation brings another educational facet to the site. In Pompeii, visitors have the opportunity to explore a uniquely preserved ancient city, view archaeological excavations in progress and, with some of the mosaics being treated in situ, they would be able to learn about the dangers facing in situ artifacts and how responsible sites can approach their preservation. The *musealization* of the site has been a focus of the SAP for many years since visitors purchasing tickets provide funding for further work at the site. For example, several of the fountains at Pompeii have been renovated to provide clean, flowing water for visitors and the construction of "retractable, polyfunctional lamps" for nocturnal illumination function for both site visibility and, in conjunction with a

[48] Podany 2006, 116.
[49] Pisapia 2004, 60.
[50] Podany 2006, 116.

modern video surveillance system, for security.[51] In terms of the opus vermiculatum mosaics, the conservation procedures proposed above prepare them to add to the *musealization* of Pompeii. In the past, further preparation of the mosaics, which attempted to return them to their original radiance for presentation purposes, included damaging the mosaics. According to Podany, "Until quite recently, the final treatment of a mosaic was to grind the tesserae flat and then polish the surface. This was done to reduce or eliminate any variation in the surface plane and to enhance the color of the tesserae (often dulled by interactions with the burial environment)[…]such an irreversible action is not acceptable by today's conservation standards, and even coatings to enhance the color of the tesserae are being questioned."[52]

Pompeii's corpus of opus vermiculatum mosaics has an intrinsic, artistic value which is preserved by protecting the mosaics from deterioration and ensuring their physical survival. This value remains with the mosaics as long as they, or documentation of them, exist, even if the mosaics are removed from their original place in Pompeii. However, the mosaics' physical reality is only a fraction of its value. They have an immeasurable contextual value which also must be preserved so that they can provide as much information concerning Pompeii's cultural and artistic history as possible. This context can best be preserved by keeping the mosaics in situ and thereby retaining all of their original values: architectural, artistic, cultural, and historical. The opus vermiculatum mosaics which have already been removed have lost much of their contextual value, especially considering their discovery and removal were very poorly documented. The relatively few opus vermiculatum mosaics which remain in situ at Pompeii are only able to communicate their comprehensive importance if they are properly preserved and protected. The proposed techniques for in situ preservation have been discussed in terms of their positive and negative aspects. Since the long-term effectiveness of many of these techniques has not been identified, it is difficult to determine the appropriate methods for preserving the opus vermiculatum mosaics that are still in situ. Some version of a gate or barrier should be used to deter visitors from walking on the mosaics, and the reasonable assumption is that it should be as non-invasive, physically and visually, as possible, but the only long-term program that can truly provide protection for the mosaics is continuous vigilance.

[51] dell'Orte 1990, 45.
[52] Podany 2006, 123.

Restoration

The conservation and preservation of Pompeii's opus vermiculatum mosaics are essential for their survival. The history of the mosaics was dominated by the architectural and artistic dichotomy that defined their existence. They were used in antiquity as functional pavements but revered as works of art. As soon as they were re-discovered after the eruption, their "second life" began and altered this dichotomous characterization. Now, the mosaics are, to some extent, still seen as the grand works of art admired by the ancients, but have also become portals to the understanding of Pompeian culture and history. The preservation of context that should be so rigorously pursued is necessary for this understanding. However, the eruption of Mt. Vesuvius transformed the thriving Roman *colonia* into a city of ruins. This is the way that the site will forever be preserved and viewed. The city cannot be completely brought back to life; but through careful and accurate restoration, further insight into Pompeian life and culture could be presented to both scholars and the general public. In this section, I will focus on the restoration techniques employed since the discovery of the mosaics and the difficulties caused by the restoration of archaeological remains, specifically Pompeii's opus vermiculatum mosaics. Also, there will be a discussion of techniques implemented for presenting the mosaics in situ and how their presentation affects their preservation.

In the first century of Pompeii's excavations, restoration and reconstruction were believed to be appropriate measures for preservation but without definitive documentation, the remains were not always restored authentically. This type of preservation may attempt to retain the original context by keeping the mosaics in situ but it can also mislead scholars and visitors leading to incorrect interpretations. Ashurst wrote, "The evidence of the past which the ruins represent should be so accurately and painstakingly observed and recorded, and so well protected and maintained that their true story will survive."[53] If preservation is intended to protect the mosaics so that they may contribute to the complete understanding of Pompeii, then it must rely on accurate, authentic and undisturbed remains.

While restoration is not a necessary procedure, if done accurately and conscientiously, it can provide scholars and the general public with an idea of the original aesthetic qualities of the

[53] Ashurst 2007, xxix.

remains. "Restoration," as defined by Vaccaro, "refers to all procedures aimed at improving the object's aesthetic character and appearance, while taking into consideration its final presentation to the public."[54] While this definition does not expressly concern any motives for conservation or preservation, there is no doubt that preservation is inherent within the process of restoration. Cesare Brandi notes that, "restoration is essential to the reconstitution or preservation of the cultural value and quality of the image of an object with cultural significance, even more so for a work of art."[55] The results of the restoration of the archaeological remains and how they are presented significantly affect the way they are understood. Unfortunately, there are major issues with the use of restoration in Pompeii's opus vermiculatum mosaics which may severely inhibit the accurate interpretation and comprehensive understanding of the mosaics and their context. Most of the conservation and restoration of the mosaics was carried out in the 19th and early 20th century when the standards stressing the reversibility of treatments were not enforced. For this reason, the current presentation of the mosaics should take on a more central role in representing not only the original functional and artistic dichotomy, but the history of the mosaic from the moment of construction to the present.

Almost immediately after excavation began in the Vesuvian region, restoration became a means of preserving the aesthetic of the site. Restoration and reconstruction were believed to protect the uncovered cities from further deterioration. However, there are serious issues with restoration and reconstruction that should considered. The newest, authoritative work on the conservation and restoration of ruins and archaeological remains, John Ashurst's *Conservation of Ruins*, discusses many of these issues, which while not specifically focused on Pompeii, are still applicable to the site. According to Gionata Rizzi's preface to Ashurst's book, "A ruin is a building which, having lost substantial parts of its architectural form, has ceased to function as such."[56] In fact, Pompeii's unique state of preservation has made the exposed site more of a collection of ruins than most other archaeological sites.

Each of the directors of the excavations at Pompeii proceeded differently with the excavation, preservation, and restoration of the site. During the 18th and 19th centuries, restoration was practiced for two reasons. First, they believed it was inexorably tied to

[54] Stanley-Price 1996, 326.
[55] Stanley-Price 1996, 326.
[56] Rizzi 2007, xx.

preservation. Several of the directors saw the restoration of walls and roofs as an opportunity to protect the architectural remains and, in turn, the decorative remains such as wall paintings and mosaics.[57] Secondly, it was thought to be important to restore the ancient site to its former brilliance. The restoration of façades, in particular, seemed to give the site a renewed sense of life. The 19th century in situ restorative efforts at Pompeii concentrated mainly on the walls. Since the 1763 edict restricted the demolition of walls as a means of detaching their paintings, the walls had to be preserved in some way. Thus the restoration, conducted by Arditi and Bonucci, re-erected fallen walls, covered exposed walls to protect them from the elements, and even reconstructed walls using original materials, when possible. According to a statement made by Bonucci in 1822, "The edifices that by hand are being uncovered in this buried city, are found, as noted well by His Eminence, for the most part reduced into a bad state; so in order to preserve some, the most interesting, and in order not to forget the idea, I add in sorrow seeing that which relates very much to the study of the venerable antiquity entirely collapse, they are in need of indispensible repairs and of necessary restorations."[58] He continued by outlining "urgent remedies," which include covering the walls with tiles. Bonucci wrote, "These covers not only preserve the ancient structure, but they also preserve the plaster, and particularly those in which there are remains of paintings."[59] While it may seem that Bonucci merely recognized the importance of preserving the site, he also realized that reconstructing the collapsed and damaged edifices would partially aid in restoring Pompeii's former brilliance. He recommended the restoration of architectonic objects "that contribute in one way or another to administer a sufficient idea of their form, greatness, and representation."[60]

Unfortunately, the 1763 edict had little or no effect on the excavation of mosaic pavements and they were not included in the in situ restoration and preservation. The mosaics were not mentioned in any of the remaining 19th century letters that discuss restoration at Pompeii.[61] It is likely that the mosaics, especially the relatively easily detachable opus vermiculatum emblemata were either still regarded as moveable artifacts, or they were

[57] According to Casiello (1986, 321), "They joined some pieces of new fabric with the ancient…and made roofs with tiles, and canals in order to stop the rain from penetrating the inside and destroying it."
[58] Pagano 1994, 174.
[59] Pagano 1994, 174.
[60] Pagano 1994, 174.
[61] The letters are retained by the Archives of the State of Naples but have been collected and presented in Pagano 1994.

recognized as being in danger of further damage and deterioration if left in situ. Archaeologists were able to recognize the expansive damage that awaits the unprotected, in situ remains. In a report given by Rafaelle D'Ambra[62] to the Commission of the Council of Civil Buildings, he gave an example of "villainous" restoration at the House of M. Lucretius (IX.3.5) in Pompeii. He wrote that when an iron roof was being constructed above a triclinium in the house, the supporting beams were raised right in the middle of a mosaic pavement and if an official had not screamed at the "*vandalico atto*," the mosaic would have been severally damaged.[63] Fiorelli's purely discovery-driven system at the end of the 19th century was modified in the beginning of the 20th century by Spinazzola, who focused on reconstructing the façades and upper floors of the more exquisite houses as they were being excavated. The restoration of the atrium mosaic in the House of Paquius Proculus, the most extensive mosaic restoration in Pompeii, occurred during this time. At the time of excavation, the mosaic had a large fracture across the middle of it and severe damage to the mosaic designs that immediately surrounded the impluvium (fig. 4.9). None of the three opus vermiculatum designs were damaged but several other figures were ruined. Spinazzola made the appropriate decision not to attempt to reconstruct the figures, but leave them blank (fig. 4.10).[64] After Spinazzola, Maiuri expanded the reconstruction to a larger sampling of the excavated buildings.[65]

These restoration and reconstruction practices were originally only applied to the vertical elements such as walls, columns, and façades, and as was mentioned in the previous chapter, they were also applied with the preservation of the precious architectural features in mind. While restoration for the purpose of preservation may be a noble cause, there are many problems inherent to the act of restoration, especially as it concerns works of art like the site's decorative mosaics. The most significant concern with restoring or reconstructing a decorative mosaic is identified by Rizzi, who states, "…the original state is usually unknown. One can obviously make hypotheses on the grounds of solid archaeological evidence and careful stylistic

[62] According to Pagano (1994, 185), "D'Ambra was in charge of writing the relative relation to the excavations at Pompeii and to propose the relative reforms."
[63] Pagano 1994, 185; D'Ambra calls this house the "Cassa detta del Decurione" because, at the time his report was written, the house was identified as belonging to a *decurion*, but the inscription identifying the house as that of M. Lucretius had not yet been found; the mosaic in the account was not an *opus vermiculatum* pavement.
[64] Spinazzola 1953, 306.
[65] Berry 1998, 8; Spinazzola and Maiuri were responsible for the reconstruction and restoration after the World War II bombings (Spinazzola 1953, XXI-XXII).

comparisons, but they are hypotheses nonetheless."[66] It is impossible to reproduce an ancient mosaic with 100% accuracy and therefore, "[reconstructing] what has been lost based on these arguments may lead to the 'invention' of a monument that never existed."[67] The opus vermiculatum mosaics have not been restored as extensively as other mosaics from Pompeii, probably because it is much more difficult to hypothesize the detailed iconography of the figural scenes than it is a repeating geometric pattern. However, some restoration has been done and it has negatively affected the mosaics' appearance and, in turn, the study of the mosaic. Probably the most striking example is the Lion mosaic (cat. 17) from the House of the Centaur. On display now at the National Museum, the mosaic is a combination of original and replaced tesserae, as well as mortar-filled lacunae. Although there are several lacunae, the inconsistency in the restoration makes the mosaic even more difficult to understand. While some of the lacunae have been replaced with darker tesserae in order to distinguish from the original, others are replaced in the same shade making it much more difficult to make that distinction. In other places, white or cream-colored tesserae were used to replace colored originals giving the figures an uneven look. The central lion has been a victim to this restoration. After restoration, its body contains at least five different hues of tesserae (fig. 4.11). The two winged figures immediately below the lion have discolored and misshapen body parts and attributes that were caused by the restoration (fig. 4.12). The restoration makes it difficult to focus on the subject matter of the mosaic and it becomes very difficult to distinguish between the original decoration and the invented restoration. This mosaic was excavated and removed between 1829 and 1830 and may have been restored soon after its discovery.

It is also possible that the restoration was performed in antiquity. Due to the earthquake of 62 C.E., much of Pompeii was in a state of restoration when Mt. Vesuvius erupted in 79 C.E. It has been suggested by Adolf Hoffman that several of the opus vermiculatum mosaics, particularly the three that form the threshold of the Alexander exedra in the House of the Faun, were restored after being damaged by the earthquake (fig. 4.13).[68] Unfortunately, there is no available documentation of the condition of either the Lion mosaic or the threshold mosaics from when they were discovered and there are no published records of any post-excavation treatments.

[66] Rizzi 2007, xxi.
[67] Rizzi 2007, xxi.
[68] Hoffmann 1994, 124.

Over 130 years after the Lion mosaic was excavated and restored, the 1964 Venice Charter was adopted in order to standardize the ideal processes for preservation and restoration at archaeological sites. The Charter says that the "aim [of restoration] is to preserve and reveal the aesthetic and historic value of the monument and is based on respect for original material and authentic documents. It must stop at the point where conjecture begins."[69] According to the Charter, the only acceptable method of restoration on archaeological sites is *anastylosis*, which is the restoration of an architectural ruin by using only the appropriate, recovered elements of that ruined architecture.[70] Thus, in order to recreate missing fragments of mosaics, one must use only recovered tesserae. However, since recreating the details of works of art such as opus vermiculatum mosaics is much more difficult than restoring structural features, anastylosis should not be attempted. A high level of accuracy cannot usually be determined since the mosaics were damaged by the 62 C.E. earthquake and the 79 C.E. eruption, and there are no records of the details of the original, complete decoration. The 19th century French architect Eugène Viollet-le-Duc realized the virtual impossibility of perfect restoration, even through *anastylosis*. He said, "to restore is not to preserve, to repair, or to rebuild; it is to reinstate to a condition of completeness which may never have existed at any given time."[71]

One element of restoration and reconstruction that is rarely used for ancient opus vermiculatum mosaics is accurate reproduction. With this technique, the entire mosaic is created anew. There are several grounds for using reproduction for the preservation of the original mosaic. First of all, reproducing the mosaic is one way of creating an accurate record of it, ensuring a future for the artistic tradition of the mosaic. This technique has only been used once for an opus vermiculatum mosaic at Pompeii, appropriately for the most famous and iconic example, the Alexander mosaic.[72] The project was a complete success and today, visitors can see the Alexander mosaic as it was meant to, in context within the House of the Faun. Also, as Marco Merola notes, the fact that the original Alexander mosaic currently hangs on a wall in the National Museum (fig. 4.14) means that that it is protected "from feet of Pompeii's two million plus yearly visitors, as well as from the rain and sun that have damaged the whole site."[73] The

[69] ICOMOS 1994, art. 9
[70] Stanley-Price 2003, 274.
[71] Viollet-le-Duc 1854, 195.
[72] The details of the process of recreating the Alexander mosaic can be found in Merola 2006, 36-40.
[73] Merola 2006, 36.

usefulness of reproduction also has implications in the preservation of the much valued context. Although removal is not a recommended preservation technique, it may sometimes be required for a mosaic's protection. And as we have seen, removal destroys the mosaic's context. An accurate replica of the mosaic may be able to restore some of the context taken away with the detachment of the original mosaic. The mosaicists in charge of recreating the Alexander mosaic also attempted to reproduce some of the technical details of the original work such as the exact types of marble for the tesserae (fig. 4.15).[74] In the process, the reproduction of the mosaic provided insight into difficulties surrounding the original creation of the exceptionally large mosaic. "Making such a huge mosaic using no less than two million tesserae only .04 to .08 inches square is very slow and tedious work." According to one of the participating mosaicists, "Sometimes we were only able to complete between one to two square inches a day."[75] The process is probably almost as painstaking as the production of the original mosaic and is quite expensive and time-consuming. In fact, the reproduction of the Alexander mosaic took over two years and cost approximately $216,000.[76] For this reason, it is unlikely that it would be used except in special circumstances.

The reproduction has provided visitors with a more complete experience at Pompeii. The archaeological superintendent of Pompeii, Pietro Giovanni Guzzo wanted visitors "to have the impressions they are entering the same luxurious house in which the ancient Pompeian owners lived before it was destroyed by the eruption of Mt. Vesuvius in A.D. 79." Merola's description of the result of the reproduction was that "the most famous mosaic to survive from the ancient Roman world once again adorns Pompeii's House of the Faun." While this is technically true, a more appropriate statement would be that the mosaic adorns the ruins of the House of the Faun (fig. 4.16). The reproduction of the Alexander mosaic is still only a small step in achieving the goal set forth by Guzzo, but it would truly be a monumental project, both in effort and money, to reproduce an entire Pompeian house, especially the House of the Faun. Even earlier Pompeian archaeologists realized that visitors to Pompeii would probably benefit from seeing a Pompeian house during the peak of the city's civilization. In his suggestions to the Commission for further

[74] Merola 2006, 37: "'Most of the yellow and red marbles came from Egypt in antiquity,' according to expert mosaicist Paolo Recagni. 'We tried to select equal or similar tones using local materials, and I think we achieved it.'"
[75] Merola 2006, 37-9.
[76] Merola 2006, 36.

restorative and preservative action, D'Ambra proposed "the reconstruction and restoration of an entire Pompeian house, adorning it to all that it was at the time it was buried."[77] This suggestion was never executed.

One other mosaic has been reproduced in order to replace the original, detached one. The figural emblema, realized in opus tessellatum, depicts three doves and a jewelry box (fig. 4.17). Unlike the Alexander mosaic reproduction, the modern mosaicists who recreated the dove emblema also replaced the tesserae in the mosaic's lacunae (fig. 4.18). Fortunately, there were only a few, small lacunae and the limited color scheme of the mosaic allowed for the accurate replacement of tesserae.

Reproduction certainly seems to be one of the better ways to balance the preservation of the physical integrity of the mosaic and the context of the site. The mosaics are able to be better preserved in the National Museum than in situ, since in the museum they are in a climate-controlled environment and can be routinely maintained. This is clear by even a visual analysis of the mosaics. Some of the best preserved mosaics are those which were discovered earliest and immediately removed to the museum, as in the case of the Dioskourides mosaics. The difficulty with reproduction is the cost and the necessary time commitment, but in the long-term, this may be the safest option for the mosaics.

The restoration of Pompeii's opus vermiculatum mosaics is a very delicate matter. The use of modern materials for preservation by restoration at Pompeii and the other Vesuvian cities, including major projects like the Alexander mosaic reproduction, has, according to Rizzi, "gradually transformed the ancient fabric into a mixture of authentic and reconstructed, where modern additions merge inexorably with the original buildings."[78] Since the restoration work is designed to imitate the original, documentation is the only way to ensure that the additions and restoration remain understandably separate from the primary ruins. According to Rizzi, "the problem is that the more a ruin is restored, the more it loses its authenticity; the more its evocative power is diluted, the more its archaeological truth is blurred."[79] The replacement of lost tesserae in the mosaics could mislead later scholars. Large lacunae in the mosaics

[77] Pagano 1994, 186.
[78] According to Rizzi (2007, xxii), "a recent study demonstrates that nearly 50 percent of what we can see today [at Herculaneum] was built between 1930 and 1950."
[79] Rizzi 2007, xxi.

unfortunately prevent a comprehensive understanding of the works of art, but at least the remains of the original mosaic are authentic. The most conspicuous example of this is the Rape of the Leucippides mosaic (cat. 34) from the House of the Five Floors (VIII.2.16). Less than 50% of the tesserae remain and it is only possible to determine the iconography of a *biga*, a fallen nude figure and the legs of two others driving the chariot, which does not confirm the identity as the Rape of the Leucippides. Restoration betrays the authenticity of the mosaics and therefore should not be attempted. Rizzi says that, "we can only try to protect it against further decay and preserve it as it is."[80] The opus vermiculatum mosaics are partially defined by their decorative properties and these should be highlighted and displayed for the benefit of both scholars and visitors to Pompeii and the National Museum. If restoration is, however, by definition focused on recovering the aesthetic properties of the archaeological remains, then their motives should be secondary to the need for preservation.

[80] Rizzi 2007, xxii.

CHAPTER 5

CONCLUSION

The current state of preservation of the 37 opus vermiculatum mosaics discovered in Pompeii is determined mostly by the history of the treatments. In this study, I have established that the development of new, more effective excavation methodologies at Pompeii provided for an evolving understanding of the way that archaeological remains, such as the mosaics, should be treated. The understanding of how the mosaics have reached this state of preservation is important so that modern conservators can continue to preserve the mosaics, particularly those which remain in situ, without making the mistakes of the past. The use of Pompeii's opus vermiculatum mosaics as a case study for the understanding of excavation, conservation and preservation at the site was appropriate because the mosaics are significant in many different respects. They were valuable to their ancient owners as both functional pavements and exquisite works of art and to modern scholars as representative of artistic tastes of the wealthy citizens of Pompeii in the 1st century B.C.E. In situ, the mosaics provide a contextual understanding to scholars and the general public of how the Pompeian elite demonstrated their wealth and status.

Only through their preservation will the mosaics continue to provide a window into the culture and society of ancient Pompeii. Shortly after the eruption of Mt. Vesuvius, the Silver Age Latin poet Statius asked, "Will the future generations believe, when crops and these now deserted places once more thrive again, that cities and people are buried below and that ancestral lands have disappeared, having shared that same fate?"[1] Many modern scholars have recognized that the eruption of Mt. Vesuvius in 79 C.E. was both a curse and a blessing for ancient Pompeii and have acknowledged the site's transformation from a thriving Roman city to a collection of archaeological ruins. The first to do so, at least publically, was Winckelmann, who noted that, "being thus overflowed by the lava of Vesuvius, it was locked up and secured from the ravages of the Goths and Vandals, who destroyed most of the vestiges they found of the arts, and were preserved through a long series of barbarous ages for the improvement of very distant times."[2]

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[1] Stat. *Silvae* 4.478-85, "[…]*credetne virum ventura propago, cum segetes iterum, cum iam haex deserta virebunt, infra urbes populosque premi proavitaque tanto rura abiisse mari?*"
[2] Winckelmann 1771, iii.

This sentiment has been echoed by scholars since the time of Winckelmann, most poignantly by Johann Wolfgang von Goethe, who wrote, "Though the city, first buried under a rain of ashes and stones and then looted by the excavators, is now completely destroyed, it still bears witness to an artistic instinct and a love of art shared by a whole people, which even the most ardent art lover today can neither feel nor understand and desire."[3] It is the duty of archaeologists and conservators to protect Pompeii's archaeological remains for future generations and present them as complete and as close to their original condition as possible.

For the last half century, since the formation of associations such as the ICCM, AISCOM, and AIEMA, archaeologists and conservators have come together in order to protect the heritage of ancient mosaics. These associations have not only developed modern and technologically advanced techniques for studying, conserving, and preserving ancient mosaics, they have also prescribed a set of ideals that form a basis for how ancient mosaics are to be treated. For example, they have advocated that whenever possible, mosaics should be conserved and protected in situ, thus preserving the mosaics' context as both an artistic work and a functional pavement. In this way, both the historical and scholastic values of the remains are preserved. However, these techniques and ideals have, for the most part, only been applied to mosaics which were discovered, or re-discovered, in the last 50 years and thus have had little effect on Pompeii's opus vermiculatum mosaics, the most recent of which was discovered in 1931.

Since conservation and preservation methodologies had not yet been fully explored, the excavation techniques of the 18th, 19th, and early 20th century played the most pivotal role in the treatment of the opus vermiculatum mosaics. The earliest archaeologists at Pompeii treated the opus vermiculatum emblemata as distinct artifacts, without full appreciation of their contextual importance. Thus, they were torn from their settings, damaging both their physical and contextual integrities. According to the architect Guglielmo Bechi in 1849, "The excavation of the city of Pompeii, unique and more precious than it can be given to our times, unfortunately until now it seems that the only idea has been to execute a search for objects, and to undress the buildings of the best artworks, leaving remnants of paintings, of mosaics, and of entire

[3] Goethe 1970, 198.

abandoned structures to their total destruction."[4] Both Spinazzola and Mairui, in the first quarter of the 20th century, recognized the importance of retaining the mosaics in situ and practiced this method.

Current excavations have the potential to yield even more opus vermiculatum mosaics.[5] Maintaining the mosaics in situ, while better for the preservation of their context, creates conservation and preservation issues that must be solved in order to protect the mosaics from deterioration. Therefore, plans for conservation and preservation should be developed before work is begun so that the mosaics can be protected as soon as they are exposed. In this study, I have examined modern conservation and preservation theory in order to offer an appropriate solution for the preservation of Pompeii's in situ opus vermiculatum mosaics which would balance the necessary physical protection of the mosaic and the ideal preservation of the mosaics' contextual significance within Pompeii. Modern conservation theory provides three general solutions for the protection of mosaic pavements, but only two allow for the retention of the mosaics in situ. In determining the appropriate course for conservation treatments, it was possible to eliminate both removal and reburial as viable options because neither solution allows for the preservation of context. Additionally, both options deprive visitors to the site of the opportunity to view the mosaics. The best option, allowing the mosaics to remain uncovered and stabilized in situ, is risky due to the constant threat of natural deteriorative elements. As a result, it is imperative that conservation must be coupled with long-term preservation.

The opus vermiculatum mosaics which have been detached and placed in the National Museum are in a position to be continually maintained and protected. The in situ mosaics, however, are in a more precarious situation and must be attended to by utilizing one of the current, accepted forms of preservation. However, while creating a plan for continuous maintenance is essential for the protection of the mosaics, this study has determined that finding a balanced solution which does not compromise either the physical or contextual integrity of the mosaics is very difficult. There are serious problems with instituting many of the previously discussed in situ preservation techniques at Pompeii. Sheltering changes the ancient landscape and small-scale enclosures can prevent the mosaics from being seen. Traditionally, restoration

[4] Pagano 1994, 188.
[5] The most likely area for this to occur is regio I, where several examples of opus vermiculatum mosaics have already been discovered and much is left to be excavated.

and reconstruction were also considered suitable methods for preservation. However, the minute details of the opus vermiculatum mosaics make it virtually impossible to reproduce the original, missing designs. These and the other preservation options discussed in chapter 4 may be appropriate for other archaeological sites, but not Pompeii. Reproduction of removed mosaics seems to be one of the most promising solutions and should be considered as a possible, comprehensive solution.

Although Pompeii may, as Goethe wrote, "surprise everyone with its compactness and smallness of scale,"[6] it contains many different architectural, artistic, and archaeological elements which must be preserved and protected in different ways. The techniques used for preserving the opus vermiculatum mosaics and those used for the rest of the site are not mutually exclusive; each individual method affects the integrity of the entire site. As Annamaria Giusti noticed, "Definitive solutions are hardly possible to problems of this sort; continued research will lead to more adequate means for an appreciation of the work of art from both the aesthetic and technical-historical points of view."[7] Until these solutions are found, the best way to protect the in situ opus vermiculatum mosaics at Pompeii is to provide continuous and vigilant conservation and maintenance treatments.

[6] Goethe 1970, 198.
[7] Giusti 1994, 145.

Table 2.1: The distribution of opus vermiculatum mosaics of Pompeii by provenance.

Cat. #	Regio	Insula	House	Room	House	Mosaic Name	Location
29	1	5	2	h	Officina Coriariorum	Memento Mori	Museum
4	1	7	1	3	Paquius Proculus	Lion	In situ
5	1	7	1	3	Paquius Proculus	Peacock	In situ
6	1	7	1	3	Paquius Proculus	Peacock 2	In situ
8	1	7	1	16	Paquius Proculus	Nile Scene	In situ
7	1	10	4	11	Menander	Nile Scene	In situ
9	1	10	4	21	Menander	Symplegma	In situ
10	1	10	4	47	Menander	Strigils	In situ
13	6	1	7	23	Vestals	Medusa	Museum
16	6	8	3.5	8	Tragic Poet	Satyr Play	Museum
17	6	9	3.5	27	Centaur	Lion	Museum
3	6	11	9	42	Labyrinth	Theseus & Minotaur	In situ
25	6	11	9	44	Labyrinth	Cockfight	Museum
26	6	11	9	45	Labyrinth	Pigeon w/ mirror	Museum
19	6	12	2	28	Faun	Symplegma	Museum
22	6	12	2	30	Faun	Cat and Hen/Water Foul	Museum
21	6	12	2	34	Faun	Tiger Rider	Museum
20	6	12	2	35	Faun	Marine mosaic	Museum
24	6	12	2	37	Faun	Alexander	Museum
23	6	12	2	37	Faun	Alexander threshold	Museum
36	6	12	2	42	Faun	Lion	Deteriorated
18	6	12	2	53	Faun	Masks scendiletto	Museum
35	6	15	14	m	Termopolio	Woman's Portrait	Museum
2	7	4	31	22	Colored Capitals	Marine mosaic	In situ
37	7	6	38	29	Cipius Pamphilus	Marine mosaic	Stolen
14	7	13	23	1	Bottega	Satyr Mask	Museum
15	7	13	23	1	Bottega	Silenus Mask	Museum
1	7	16	17	23	Ma. Castricius	Tragic Mask	In situ
33	8	2	16	o	Five Floors	Marine mosaic	Museum
34	8	2	16	s	Five Floors	Rape of the Leucippides	Museum
31	8	2	34	n	Mosaic Doves	Doves mosaic	Museum
32	8	2	34	o	Mosaic Doves	Lion	Museum
27	9	2	27	d	Granduke of Tuscany	Neptune and Amphitrite	Museum
28	9	2	27	e	Granduke of Tuscany	Fish and Ducks	Museum
30	9	8	3.7	12	Centenary	Gorgoneion	Museum
11	Outside Herculaneum Gate				Villa of Cicero	Street Musicians	Museum
12	Outside Herculaneum Gate				Villa of Cicero	The Sorceress	Museum

Tab. 2.2. Opus vermiculatum mosaics from Pompeii by excavation date.

Cat. #	Excavation Date	Mosaic Name	House	Regio	Insula	House	Room
1	1759	Tragic Mask	Ma. Castricius	7	16	17	23
11	1763	Street Musicians	Villa of Cicero	Outside Herculaneum Gate			
12	1764	The Sorceress	Villa of Cicero	Outside Herculaneum Gate			
13	1784	Medusa	Vestals	6	1	7	23
14	1821	Satyr Mask	Bottega	7	13	23	1
15	1821	Silenus Mask	Bottega	7	13	23	1
16	1825	Satyr Play	Tragic Poet	6	8	3.5	8
17	1829	Lion	Centaur	6	9	3.5	27
18	1830	Masks scendiletto	Faun	6	12	2	53
19	1830	Symplegma	Faun	6	12	2	28
20	1830	Marine mosaic	Faun	6	12	2	35
21	1830	Tiger Rider	Faun	6	12	2	34
22	1830	Cat and Hen/Water Foul	Faun	6	12	2	30
23	1831	Alexander threshold	Faun	6	12	2	37
24	1831	Alexander	Faun	6	12	2	37
36	1831	Lion	Faun	6	12	2	42
2	1832-1833	Marine mosaic	Colored Capitals	7	4	31	22
3	1834	Theseus & Minotaur	Labyrinth	6	11	9	42
25	1834	Cockfight	Labyrinth	6	11	9	44
26	1834	Pigeon w/ mirror	Labyrinth	6	11	9	45
27	1870	Neptune and Amphitrite	Granduke of Tuscany	9	2	27	d
28	1870	Fish and Ducks	Granduke of Tuscany	9	2	27	e
29	1874	Memento Mori	Officina Coriariorum	1	5	2	h
30	1879-1880	Gorgoneion	Centenary	9	8	3.7	12
31	1885	Doves mosaic	Mosaic Doves	8	2	34	n
32	1885	Lion	Mosaic Doves	8	2	34	o
33	1890	Marine mosaic	Five Floors	8	2	16	o
34	1890	Rape of the Leucippides	Five Floors	8	2	16	s
35	1897	Woman's Portrait	Termopolio	6	15	14	m
37	1910	Marine mosaic	Cipius Pamphilus	7	6	38	29
4	1911	Lion	Paquius Proculus	1	7	1	3
5	1911	Peacock	Paquius Proculus	1	7	1	3
6	1911	Peacock 2	Paquius Proculus	1	7	1	3
7	1927-1928	Nile Scene	Menander	1	10	4	11
8	1929	Nile Scene	Paquius Proculus	1	7	1	16
9	1930-1931	Symplegma	Menander	1	10	4	21
10	1930-1931	Strigils	Menander	1	10	4	47

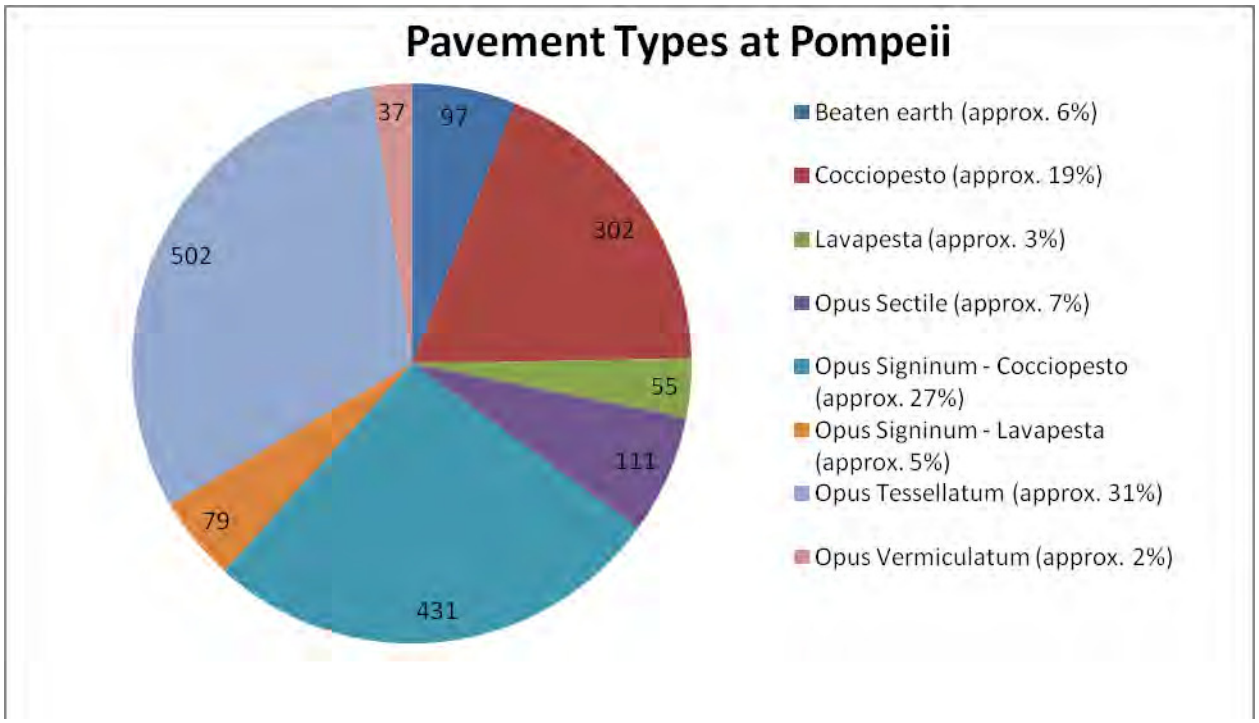

Fig. 1.1. Distribution of pavement types at Pompeii (compiled by author from Bragantini, et al. 1992).

Fig. 1.2. Opus tessellatum pavement with missing emblema and visible weed growth from Oecus 42 in the House of the Faun (photograph by author).[8]

[8] All room numbers are taken from Baldassare 1990-2003.

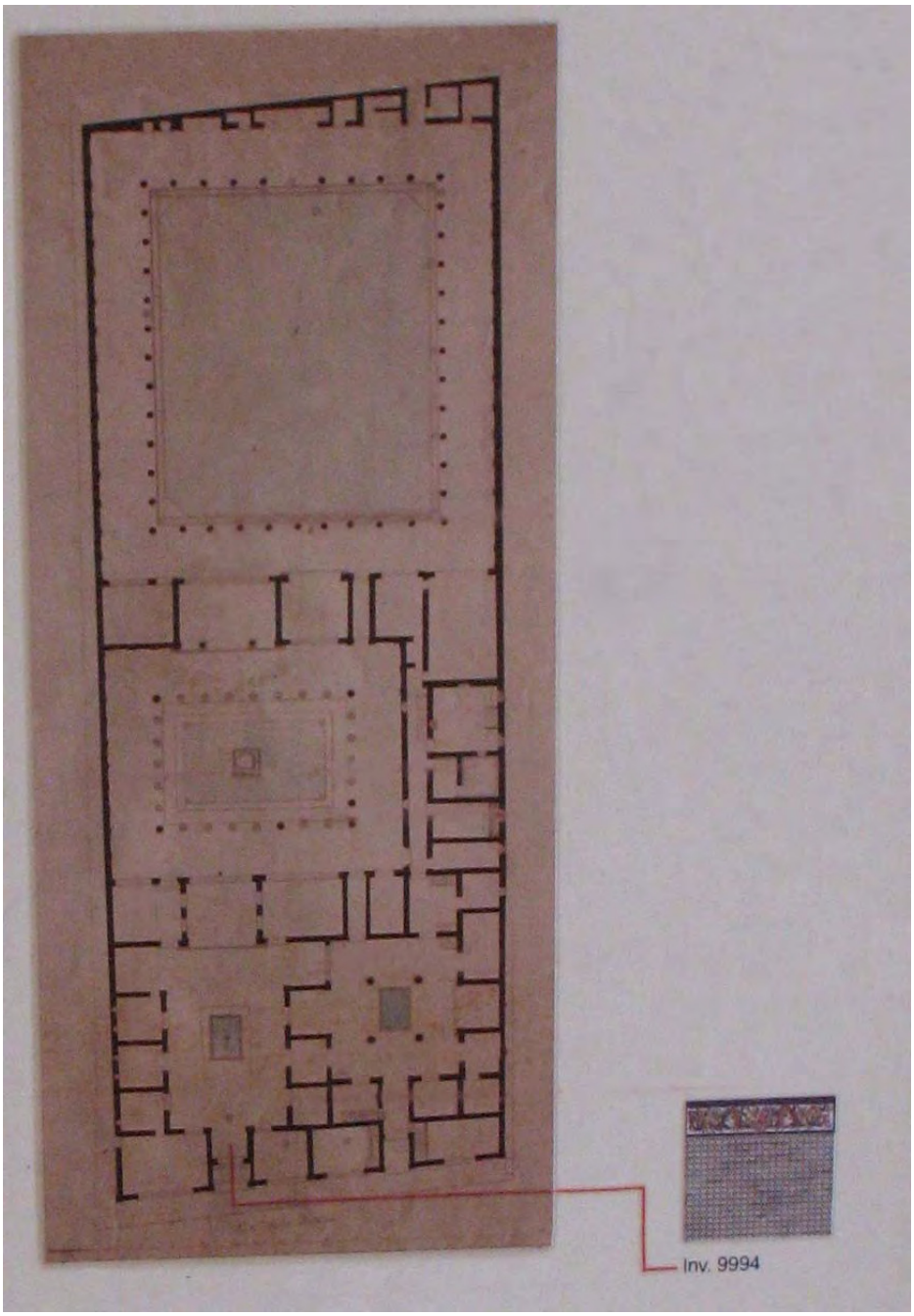

Fig. 2.1. House of the Faun plan from the National Museum showing the location of the opus vermiculatum scendiletto in the fauces (photograph by author).

Fig. 2.2. Atrium 3 of the House of Paquius Proculus showing the location of the three opus vermiculatum mosaics (original photograph from Badoni 1990, 491).

Fig. 2.3. Street Musicians painting from Stabiae. Copy of the opus vermiculatum mosaic from the Villa of Cicero (de Caro 2001, 11).

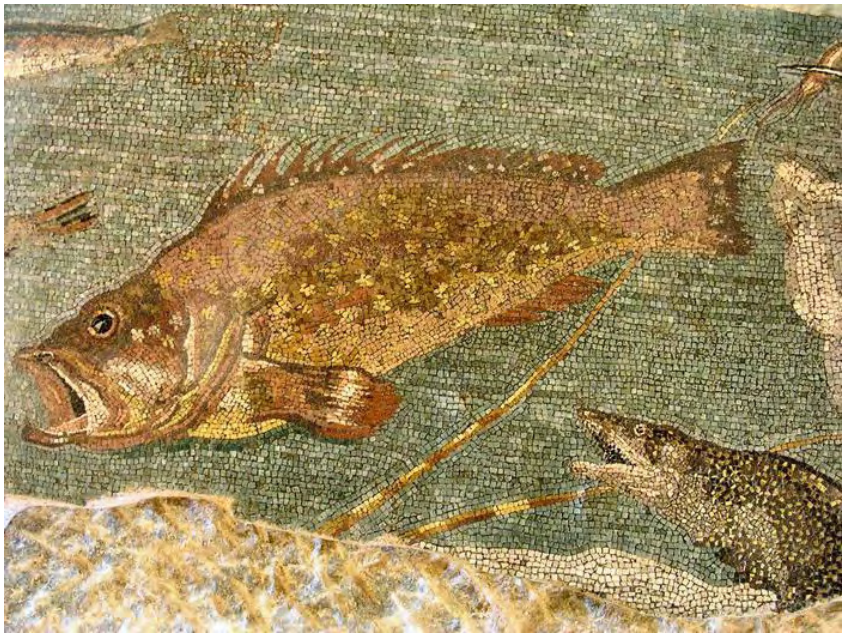

Fig. 2.4. Detail, Marine mosaic from Ampurias, Spain (De Puma 1969).

Symplegma scene from Thmuis (Tell Timai) (Cat. No. 40)

Fig. 2.5. Symplegma mosaic from Thmuis, Egypt (Daszewski 1985, pl. 34).

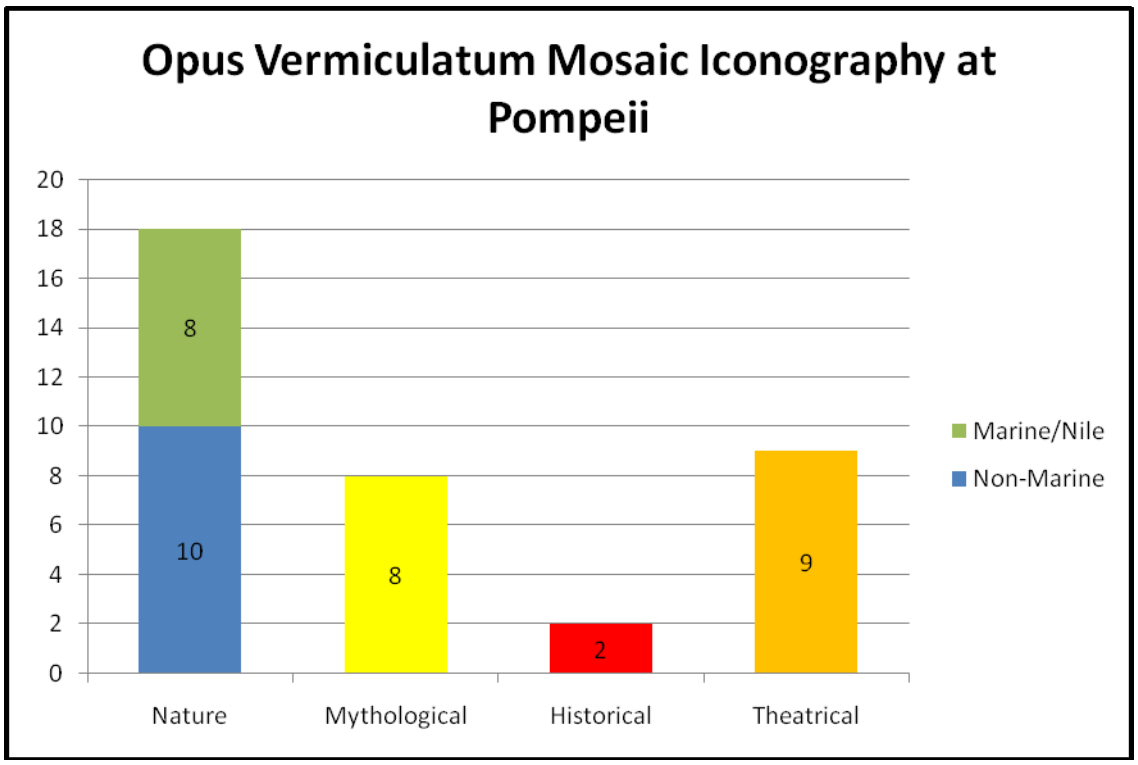

Fig. 2.6. Iconographic themes of Pompeii's opus vermiculatum mosaics.

Fig. 2.7. Plato's Academy mosaic from the House of T. Siminius Stephanus in Torre Annunziata (NM 124545)[9] (photograph by author).

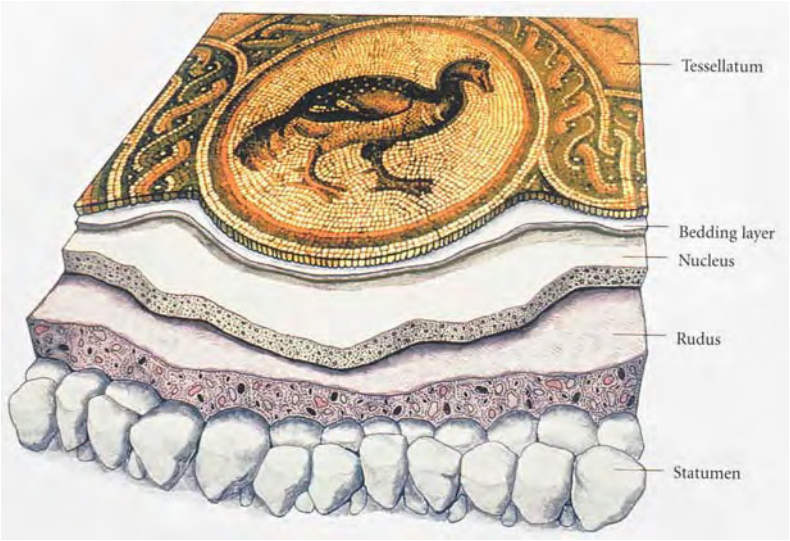

Fig. 2.8. Construction layers of a mosaic according to the specifics laid out by Vitruvius (*de Arch*. vii.1.1-4) (Roby 2006b, 102).

[9] NM: National Museum catalog numbers.

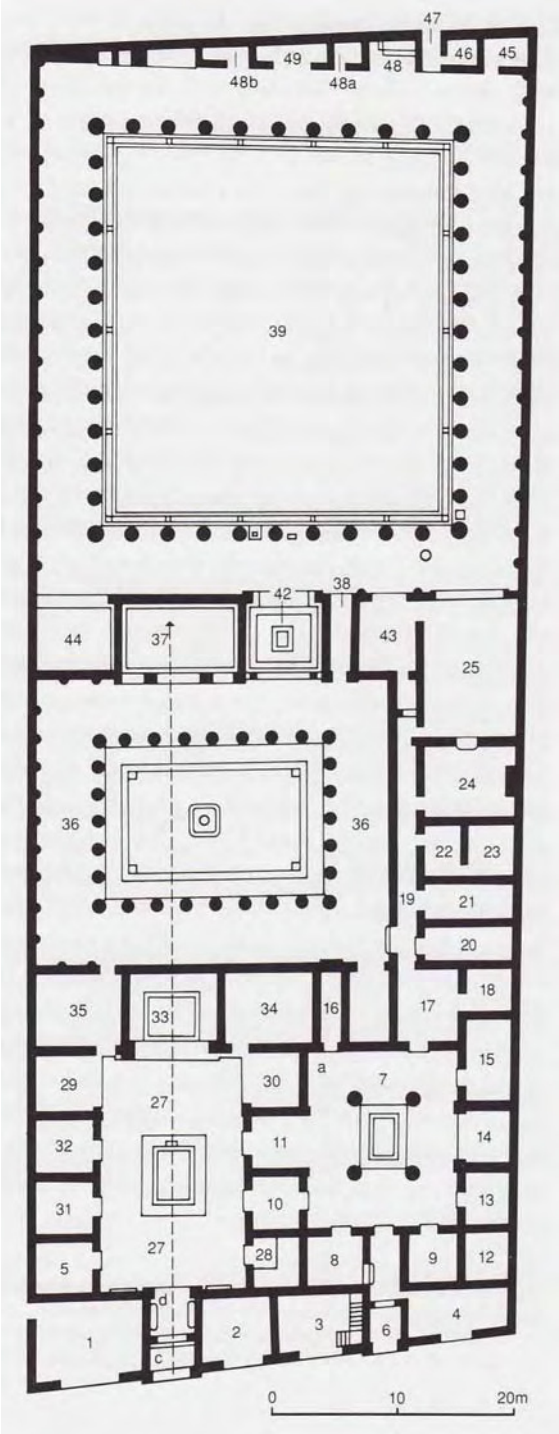

Fig. 2.9. House of the Faun plan showing the *durchblick* from the entrance and fauces through to the Alexander exedra (Clarke 1991, 82).

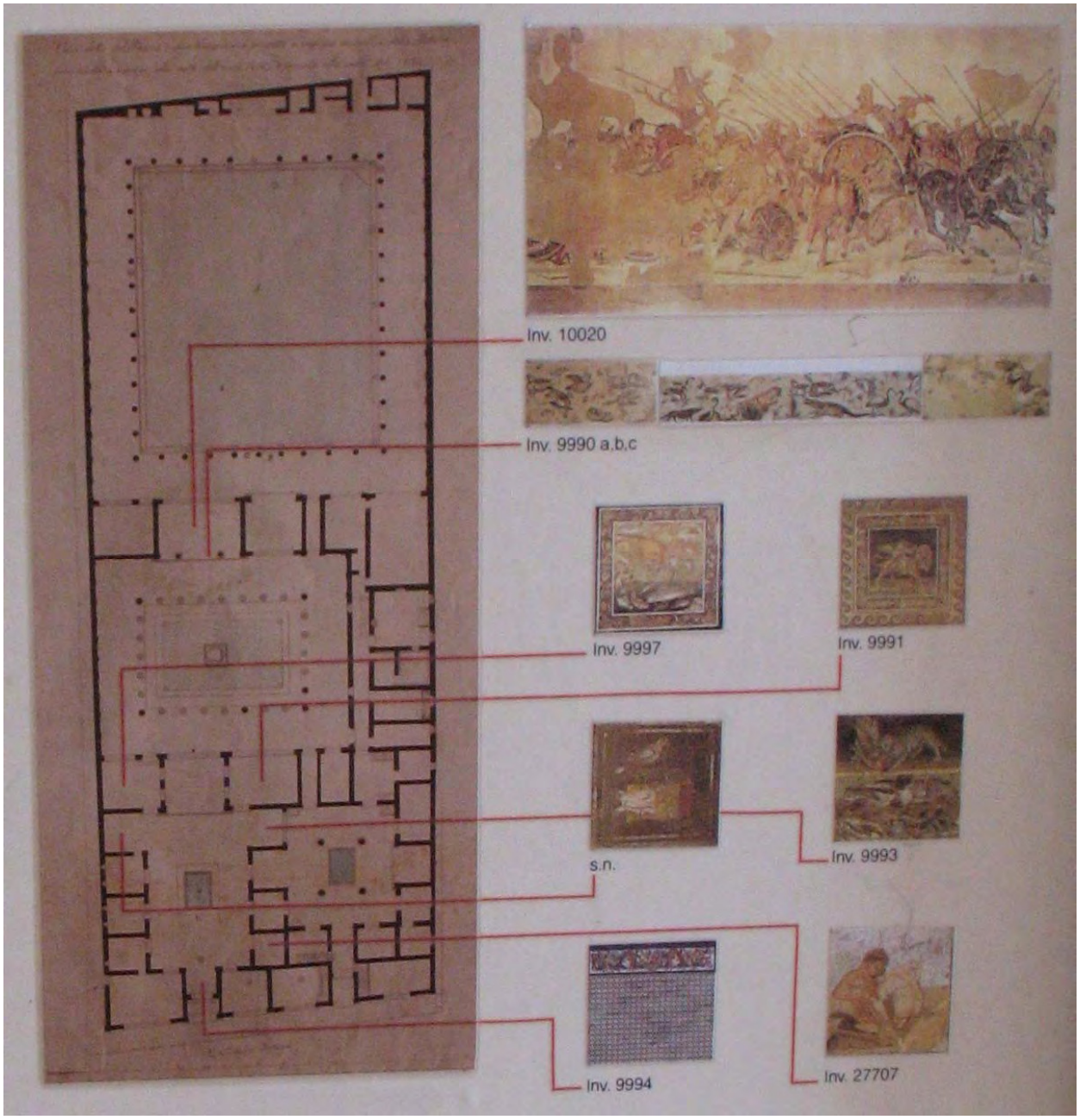

Fig. 2.10. Plan of the House of the Faun from the National Museum showing the original locations of the opus vermiculatum mosaics (photograph by author).

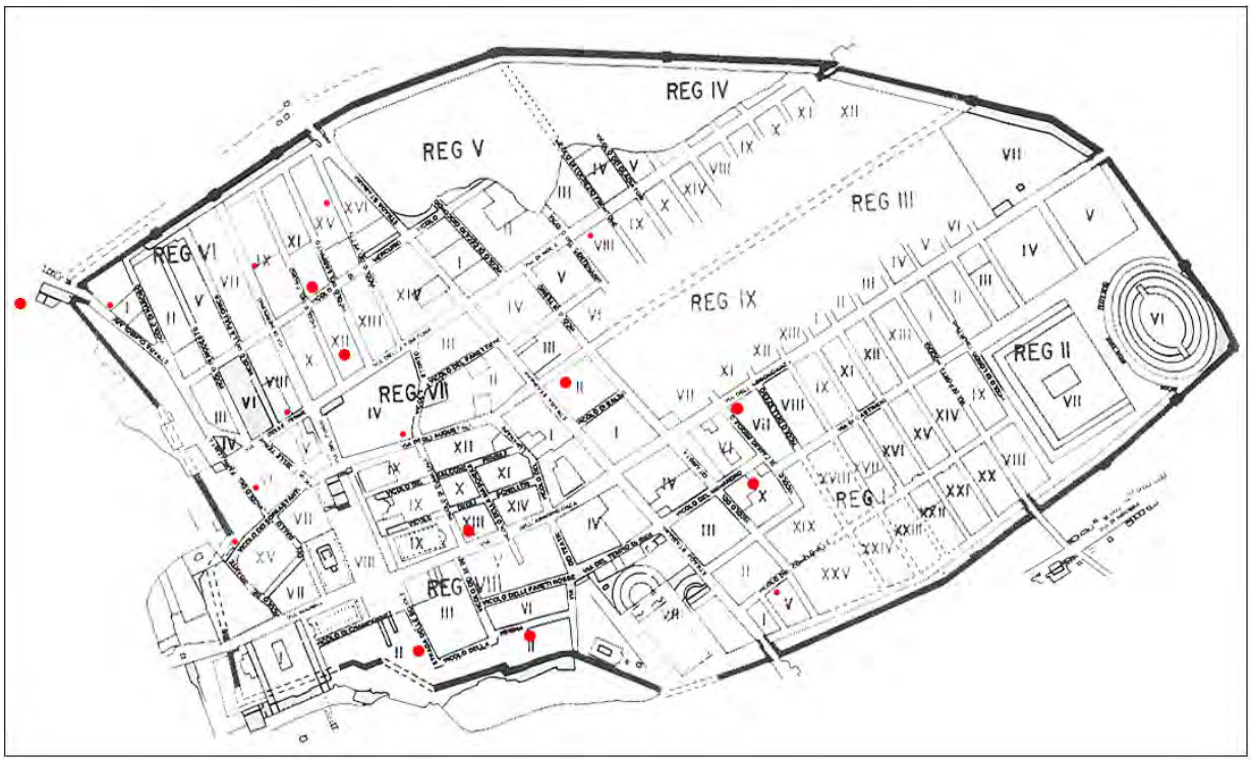

Fig. 2.11. Plan of Pompeii showing the provenance of opus vermiculatum mosaics (original city plan from Descoeudres 1994).

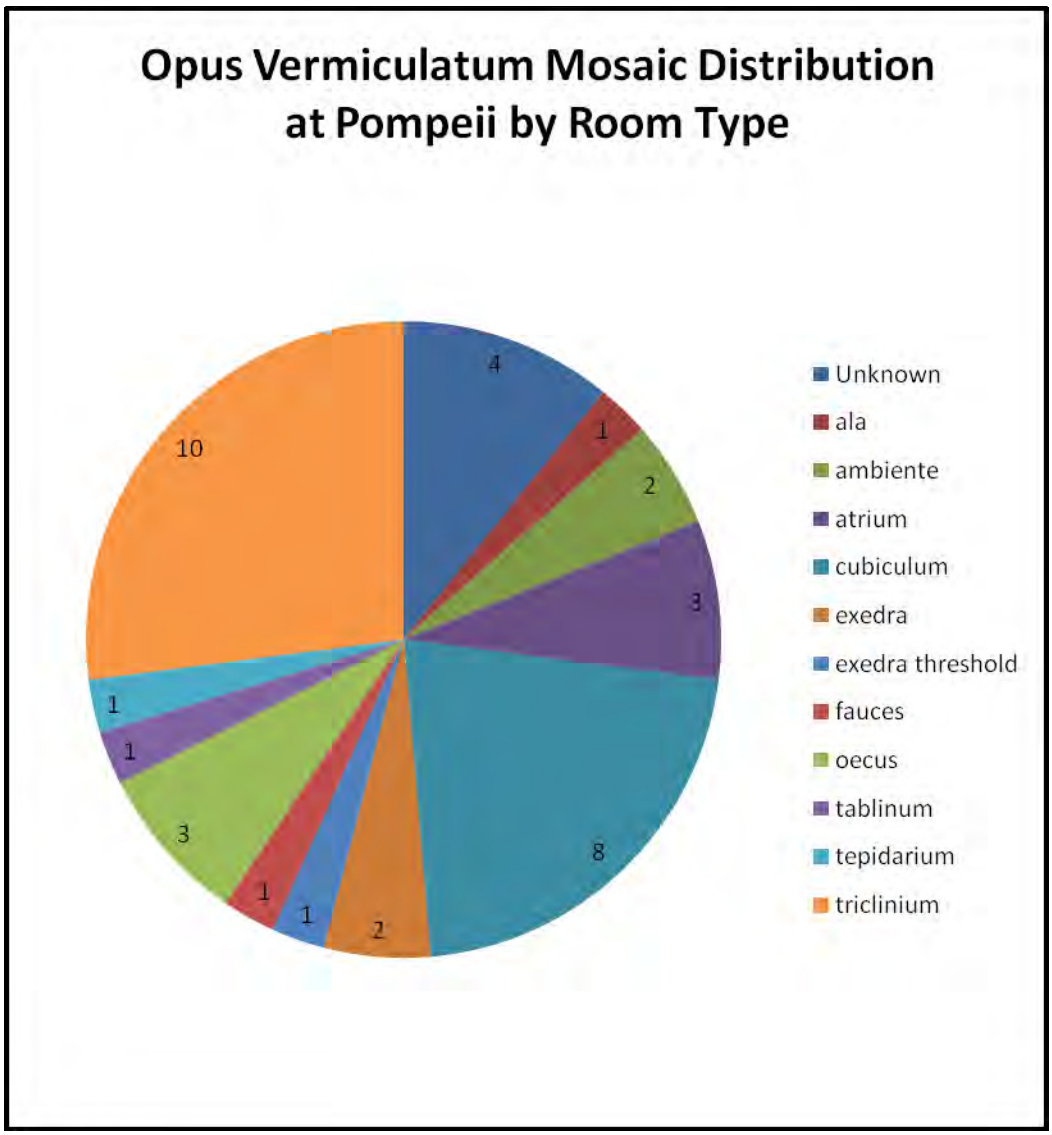

Fig. 2.12. The distribution of Pompeii's opus vermiculatum mosaics by room type (based on Baldassare 1990-2003).

Fig. 3.1. Close up of the Symplegma mosaic in Cubiculum 21 of the House of the Menander highlighting filled lacunae (photograph by author).

Fig. 3.2. Drawing of the Alexander mosaic made between its excavation and its removal (Hoffman and de Vos 1994, 123).

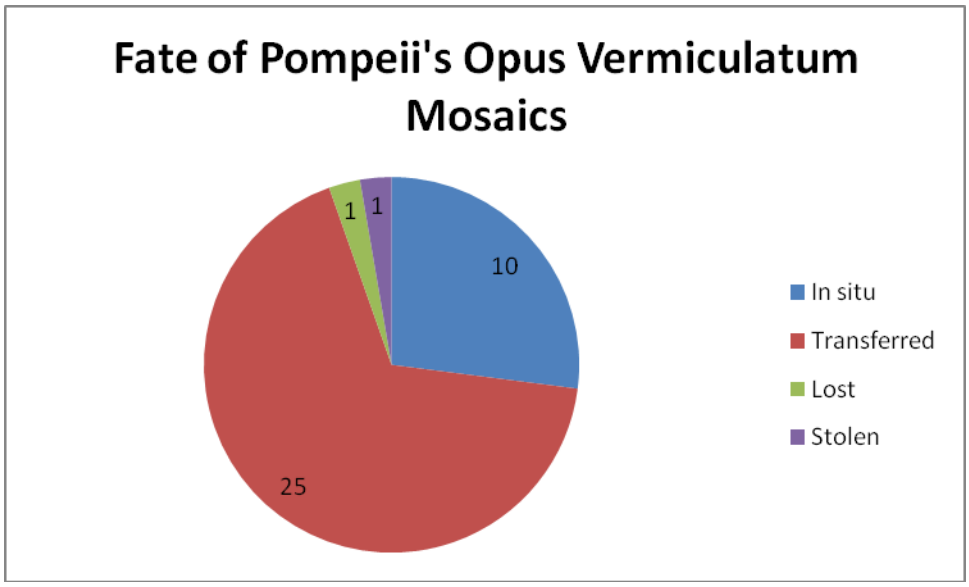

Fig. 4.1. Graph showing the various fates of the 37 opus vermiculatum mosaics from Pompeii.

Fig. 4.2. Raised wooden platform above the mosaic pavement in Atrium 3 in the House of Paquius Proculus (photograph by author).

Fig. 4.3. Wooden gates at the entrance to a *cubiculum* (21) with the *Symplegma* mosaic (photograph by author).

Fig. 4.4. Bird's eye view of Pompeii with visible, artificial roofs (Google Earth image, 13 February 2008).

Fig. 4.5. Modern hexashelter covering the mosaics of the House of Theseus in Paphos, Cyprus (Stanley-Price 2003, 277).

Fig. 4.6. Small box enclosure over the Nile mosaic in the House ofPaquius Proculus (photograph by author).

Fig. 4.7. Detail, Nile mosaic in the House of Paquius Proculus in its protective enclosure (photography by author).

Fig. 4.8 Lion mosaic from the House of the Centaur in its initial installation in the floor of the National Museum (NM 10019) (Bragantini 1993b, 855).

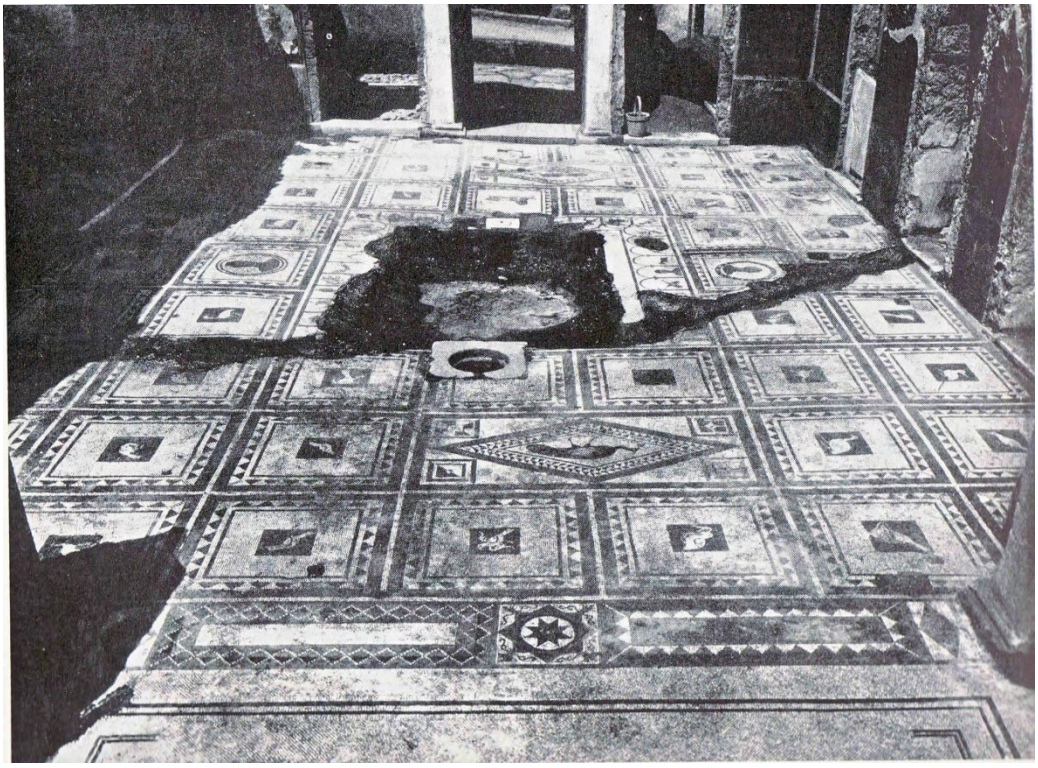

Fig. 4.9. The damaged mosaic pavement in Atrium 3 of the House of Paquius Proculus at the time of excavation (Spinazzola 1953, 312).

Fig. 4.10. The restored mosaic pavement in Atrium 3 of the House of Paquius Proculus (Badoni 1990, 491).

Fig. 4.11. Close up of the lion mosaic from the House of the Centaur with visible polychrome, restored tesserae (NM 10019) (photograph by author).

Fig. 4.12. Close up of the lion mosaic from the House of the Centaur showing the discolored and misshapen restoration of two winged figures (NM 10019) (photograph by author).

Fig. 4.13. Detail, restoration of the right panel of the threshold mosaic from the Alexander exedra in the House of the Faun (NM 9990c) (photograph by author).

Fig. 4.14. Original Alexander mosaic on the wall in room 61 of the National Museum (NM 10020) (photograph by author).

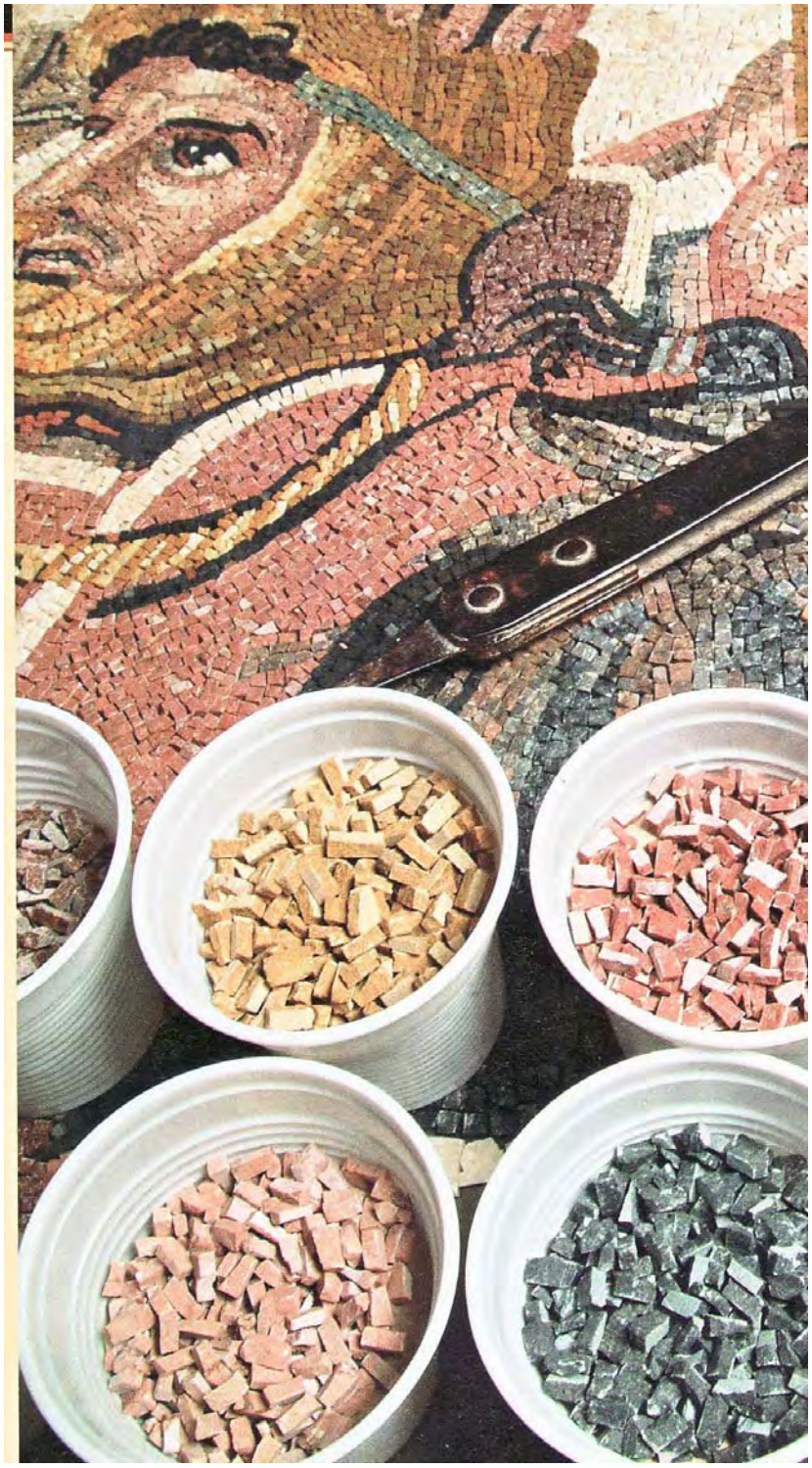

Fig. 4.15. Close up of the reproduction of the Alexander mosaic and the modern tesserae (Merola 2006, 38).

Fig. 4.16. The reproduction of the Alexander mosaic in situ in the Alexander exedra (37) in the House of the Faun (photograph by author).

Fig. 4.17. Original opus tessellatum dove mosaic from the House of the Faun currently in the National Museum (NM s.n.) (photograph by author).

Fig. 4.18. Reproduction of the opus tessellatum Dove mosaic in situ in the House of the Faun (photograph by author).

APPENDIX

CATALOG OF OPUS VERMICULATUM MOSAICS OF POMPEII

This catalog is designed to collect in one place a record of all 37 opus vermiculatum mosaics that have been discovered in Pompeii thus far. Much of the text of this thesis has concentrated on the history of excavation, conservation, and preservation techniques that have been applied to the mosaics. For this reason, the catalog is organized by the dates that the mosaics were excavated. Since the techniques for further preservation also depend on where the mosaic is currently located, the catalog further divides the mosaics into three categories: in situ (10), in the National Archaeological Museum of Naples (25), and lost from the archaeological record (2).

Each entry will include, if possible, the most recent image of the mosaic.[1] Only the Lion mosaic from the House of the Faun, which deteriorated completely before a photograph was taken, is represented by a drawing made when it was discovered. The unfortunate deficiency in published documentation concerning the excavation, conservation treatments, and preservation programs have not allowed for the comprehensive addition of all of this information for each of the mosaics. However, where the information is available, it has been included in the catalog entry. The details concerning the excavation of the mosaics were found mostly in the excavation reports. Information about conservation treatments, when published, was found in letters from the archives of the SAP and in a few of the excavation reports. Detailed reports of treatments were published for only the Tragic Mask mosaic, in Giudisce's analysis.[2] The catalog is meant to supplement the ideas presented in this thesis and, in particular, to provide evidence for the need of a comprehensive preservation program for the in situ opus vermiculatum mosaics.

[1] The majority of the images were taken upon the author's visit to Pompeii and the National Archaeological Museum of Naples in June 2007.
[2] Giudisce 2002.

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IN THE NATIONAL ARCHAEOLOGICAL MUSEUM OF NAPLES

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LOST

36. Lion mosaic (House of the Faun) 161
37. Marine mosaic (House of Cipius Pamphilus) 163

Title: Tragic Mask mosaic
House: House of Ma. Castricius (VII.16.17.23)
Excavation Date: 1759?

Dimensions: c. 14cm x 14cm.
Date: 80-50 B.C.E.

Excavation details:

- The excavation reports seem to be silent concerning the discovery of this mosaic, and indeed the entire House of Ma. Castricius. It is suggested by Bragantini that the house was excavated in conjunction with the House of Fabius Rufus (VII.16.22)[1] from which several fragments of marble were removed in 1759.[2]

Conservation/Preservation:

- There are no records for the excavation or any original treatments. However, in 2002, this mosaic was the focus for a study on mosaic conservation by Giudisce and Valentini. The study determined that the mosaic was likely "submitted in the past to a very aggressive cleaning." The study also suggested that the "deterioration of the mortar, the decohesion and superficial abrasion of the tesserae" were caused by humidity from the mosaic's location in the interior of the house.[3]
- In 2002, the mosaic was cleaned with AB57.[4]

Bibliography:

Bragantini, I. 1997. "VII 16 *(Ins. Occ.)*, 17. Casa di Ma. Castricius." In *Pompei: Pitture e mosaici.* Vol. 7, *Regio VII Parte II*, edited by I. Baldassare, 887-946. Rome: Istituto della enciclopedia italiana.

Fiorelli, G. 1860a. *Pompeianarum Antiquitatum Historia*. Vol. 1, Part1:87-92. Naples.

Giudisce, S. and M. Valentini. 2002. "L'emblema della domus di Ma. Castricius a Pompei (VII, 16, 17): problemi di conservazione." In I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002, edited by Biscontin, G. and G. Druissi, 165-174. Venice: Edizioni Arcadia Ricerche S.r.l.

[1] Bragantini 1997, 887.
[2] Fiorelli 1860a, 87-92.
[3] Giudisce 2002, 172.
[4] Giudisce 2002, 173.

Fig. A.1. Tragic Mask mosaic from the House of Ma. (Bragantini 1997, 909)

Title: Marine mosaic
House: House of the Colored Capitals (VII.4.31.22)
Excavation Date: 1832-1833?

Dimensions: 84cm. x 77cm.
Date: 80-70 B.C.E.

Excavation details:

- Unfortunately, the excavations reported of the House of the Colored Capitals by Fiorelli do not mention the discovery of this mosaic.

Conservation/Preservation:

- The mosaic has clearly been conserved through the consolidation of lacunae but there has been no documentation of this event.

Bibliography:

Desceoudres, J.-P. 1996. "VII 4, 31.51. Casa dei capitelli colorati." In *Pompei: Pitture e mosaici*. Vol. 6, *Regiones VI Parte III, VII Parte I*, edited by I. Baldassare, 996-1107. Rome: Istituto della enciclopedia italiana.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 152-153. Berlin: Verlag von Walter de Gruyter.

Fig. A.2. Marine mosaic from the House of the Colored Capitals (Descoeudres 1996, 1030)

Title: Theseus and the Minotaur
House: House of the Labyrinth (VI.11.9.42)
Excavation Date: September 9, 1834

Dimensions: c. 43.5cm. x 44cm.
Date: 70-60 B.C.E.

Excavation details:

- Fiorelli relates the discovery of the mosaic noting simply that, "a small square mosaic, upon which is represented Theseus killing the Minotaur."[1] In the next day's report, Fiorelli mentions that the mosaic was damaged in the middle.[2]

Conservation/Preservation:

- According to Fiorelli, the mosaic was torn (*svelto*) from its place in the House of the Labyrinth then, under orders from "His Eminence the Minister of Internal Affairs," was reinserted.[3] It is possible that the mosaic was removed for repairs, and then sent back to the site. The lacunae in the mosaic have been consolidated but there is no documentation to say when it was done.

Bibliography:

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:316-7. Naples.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 175-176. Berlin: Verlag von Walter de Gruyter.

Strocka, V.M. 1994. "VI 11, 8-10. Casa del Labirinto." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio VI Parte II*, edited by I. Baldassarre, 1-70. Rome: Istituto dell enciclopedia italiana.

[1] Fiorelli 1862, 316.
[2] Fiorelli 1862, 317.
[3] Fiorelli 1862, 317.

Fig. A.3. Theseus and the Minotaur mosaic from the House of the Labyrinth (Strocka 1994, 38)

Title: Lion figure in the atrium mosaic
House: House of Paquius Proculus (I.7.1.3)
Excavation Date: 1911

Dimensions: c. 100cm. x 100cm.
Date: End of the 1st c. B.C.E.[1]

Excavation details:

- According to Spinazzola, the atrium pavement mosaic had, for some time, a large fracture in its surface which damaged some of the emblemata.[2] The damage slightly affects the border around the lion figure, but not the lion itself (fig. A.5).

Conservation/Preservation:

- Since the border around the lion figure is a simple, repeating geometric design, it was possible to restore it accurately, although there is no documentation to say when this was done.

Bibliography:

Badoni, F.P. and M. de Vos. 1990. "I 7, 1. Casa di Paquius Proculus o di Cuspius Pansa." In *Pompei: Pitture e mosaici*. Vol. I, *Regio I Parte I*, edited by I. Baldassare, 483-552. Rome: Istituto della enciclopedia italiana.

Spinazzola, V. 1953. *Pompei alla luce degli scavi nuovi di via dell'Abbondanza (anni 1910-1923)*. Vol. 1:305-310. Rome: La libreria dello stato.

[1] Badoni 1990, 484.
[2] Spinazzola 1953, 306-7.

Fig. A.4. Lion figure from the atrium mosaic of the House of Paquius Proculus (Badoni 1990, 489).

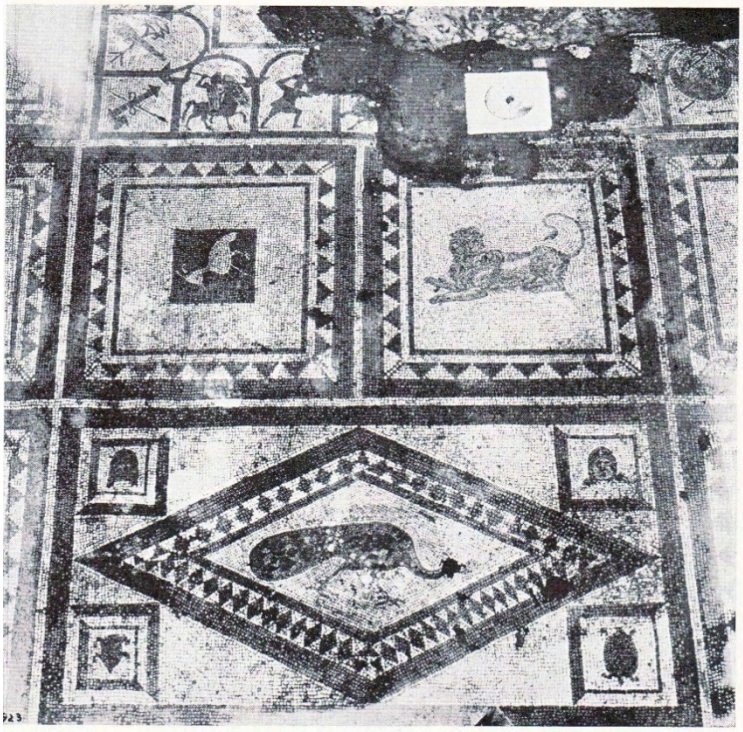

Fig. A.5. Detail, damage to the mosaic pavement from Atrium 3 of the House of Paquius Proculus (Spinazzola 1953, 309).

Title: Peacock figure from the atrium mosaic
House: House of Paquius Proculus (I.7.1.3)
Excavation Date: 1911

Dimensions: c. 100cm. x 200cm.
Date: End of the 1st c. B.C.E.[1]

Excavation details:

- Unlike the lion figure (cat. 5), this peacock figure was slightly affected by the damage sustained to the atrium mosaic pavement. Tesserae that formed the head of the peacock were lost.

Conservation/Preservation:

- The lacuna that affected the head of the peacock figure was restored, likely based on the intact peacock figure (cat. 7) on the other side of the pavement.

Bibliography:

Badoni, F.P. and M. de Vos. 1990. "I 7, 1. Casa di Paquius Proculus o di Cuspius Pansa." In *Pompei: Pitture e mosaici*. Vol. I, *Regio I Parte I*, edited by I. Baldassare, 483-552. Rome: Istituto della enciclopedia italiana.

Spinazzola, V. 1953. *Pompei alla luce degli scavi nuovi di via dell'Abbondanza (anni 1910-1923)*. Vol. 1:305-310. Rome: La libreria dello stato.

Fig. A.6. Peacock figure from the atrium mosaic of the House of Paquius Proculus (Badoni, 1990, 489).

[1] Badoni 1990, 484.

Title: Peacock figure (2) from the atrium mosaic
House: House of Paquius Proculus (I.7.1.3)
Excavation Date: 1911

Dimensions: c. 100cm. x 200cm.
Date: End of the 1st c. B.C.E.[1]

Excavation details:

- This peacock figure was unaffected by the damage sustained to the rest of the atrium pavement.

Conservation/Preservation:

- After the restoration of the damaged sections of the rest atrium pavement (fig. 4.9, 4.10),[2] the entire pavement, this peacock figure included, seems to have been subjected to a rigorous cleaning, although there is no documentation of this action.

Bibliography:

Badoni, F.P. and M. de Vos. 1990. "I 7, 1. Casa di Paquius Proculus o di Cuspius Pansa." In *Pompei: Pitture e mosaici*. Vol. I, *Regio I Parte I*, edited by I. Baldassare, 483-552. Rome: Istituto della enciclopedia italiana.

Spinazzola, V. 1953. *Pompei alla luce degli scavi nuovi di via dell'Abbondanza (anni 1910-1923)*. Vol. 1:305-310. Rome: La libreria dello stato.

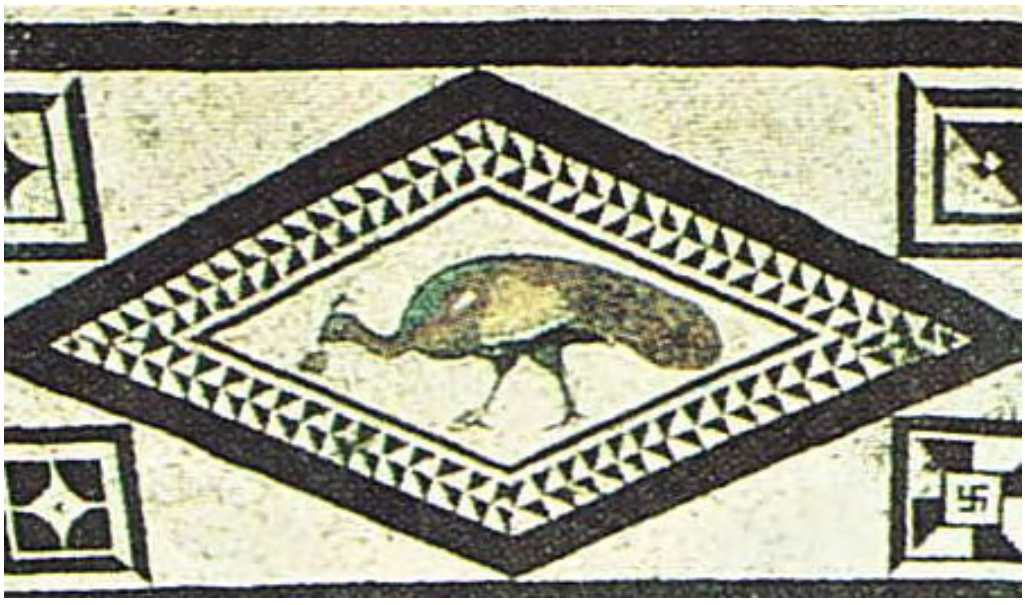

Fig. A.7. Peacock figure (2) from the atrium mosaic of the House of Paquius Proculus (Badoni 1990, 491).

[1] Badoni 1990, 484.
[2] Spinazzola 1953, 308.

Title: Nile mosaic
House: House of the Menander (I.10.4.11)
Excavation Date: 1927-1928

Dimensions: 41cm. x 41cm.
Date: 50-20 B.C.E.

Excavation details:

- According to Maiuri, the atrium and surrounding rooms, including Oecus 11 containing this mosaic, were excavated in 1927-1928.[1] However, the condition of the mosaic was not discussed.

Conservation/Preservation:

- The mosaic has been conserved through the consolidation of several lacunae in the main figural scene.
- Mau notes that Oecus 11 had been undergoing repairs prior to the 79 C.E. eruption. However, unlike the Alexander threshold mosaics (cat. 23) from the House of the Faun and the Lion mosaic (cat. 17) from the House of the Centaur, this mosaic does not seem to have had any restoration in antiquity.

Bibliography:

Ling, R.J. 1990. "I 10, 4. Casa del Menandro." In *Pompei: Pitture e mosaici*. Vol. 2, *Regio I Parte II*, edited by I. Baldassare, 240-397. Rome: Istituto della enciclopedia italiana.

Maiuri, A. 1933. *La casa del Menandro e il suo tesoro di argenteria*. Vol. 1:8. Rome: Libreria della stato.

[1] Maiuri 1933, 8.

Fig. A.8. The Nile mosaic in situ in the House of the Menander (photograph by author).

Fig. A.9. Closer view of the Nile mosaic in the House of the Menander (photograph by author).

Title: Nile mosaic
House: House of Paquius Proculus (I.7.1.18)
Excavation Date: 1929

Dimensions: Undocumented
Date: 50-20 B.C.E.

Excavation details:

- According to Spinazzola, this mosaic was discovered during the final excavations of the House of Paquius Proculus.[1] However, the excavation reports do not mention the condition of the mosaic at the time of discovery.

Conservation/Preservation:

- According to Badoni, Oecus 18, which contains this mosaic, was likely restored after the earthquake of 62 C.E.[2] While he does not specifically mention any resoration or treatments performed on the mosaic, the mosaic's current, excellent state of preservation may have been due to repairs at that time.

Bibliography:

Badoni, F.P. and M. de Vos. 1990. "I 7, 1. Casa di Paquius Proculus o di Cuspius Pansa." In *Pompei: Pitture e mosaici*. Vol. I, *Regio I Parte I*, edited by I. Baldassare, 483-552. Rome: Istituto della enciclopedia italiana.

Spinazzola, V. 1953. *Pompei alla luce degli scavi nuovi di via dell'Abbondanza (anni 1910-1923)*. Vol. 1:314-315. Rome: La libreria dello stato.

[1] Spinazzola 1953, 314.
[2] Badoni 1990, 483-4.

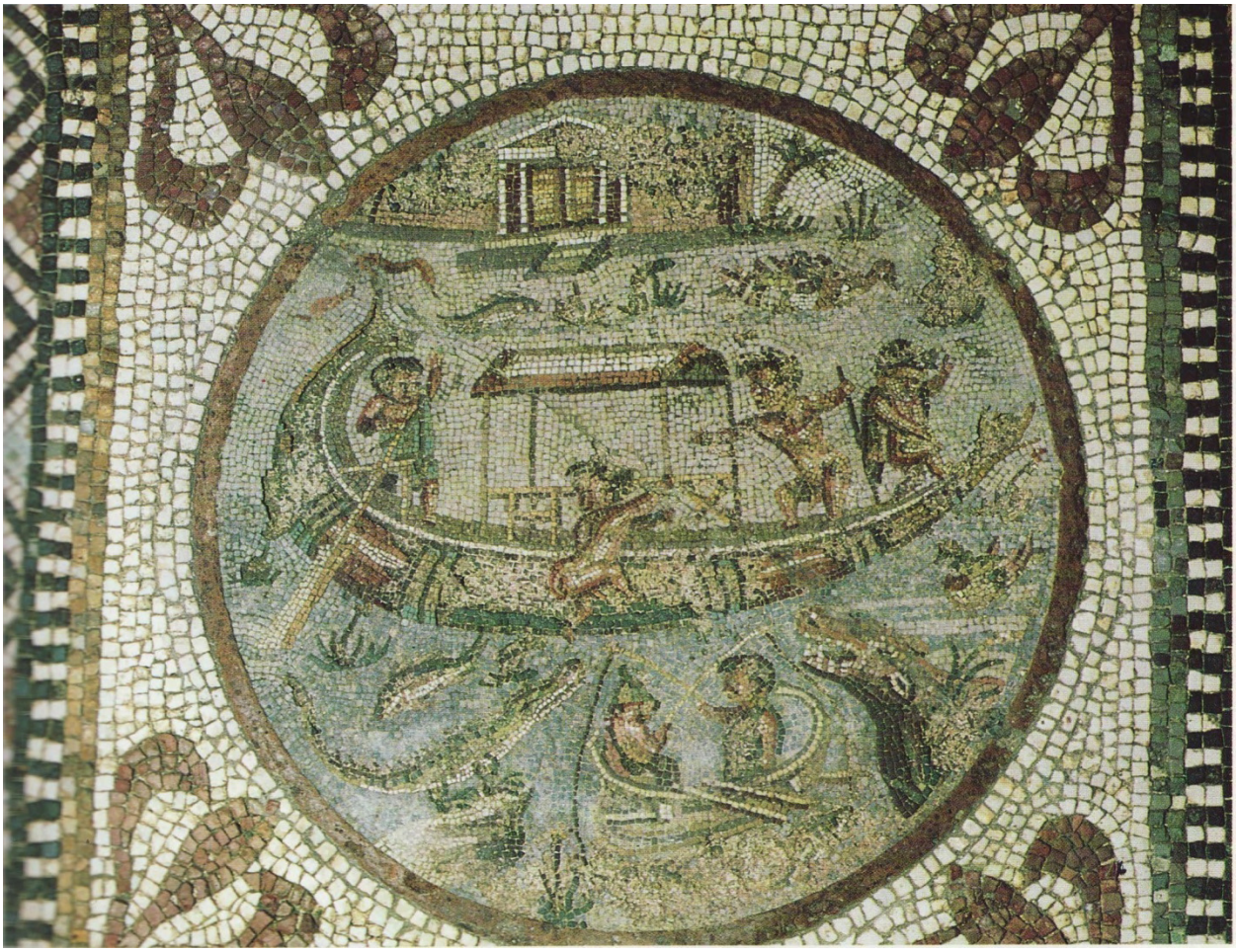

Fig. A.10. Nile mosaic from the Oecus 18 in the House of Paquius Proculus (Badoni 1990, 533).

Title: Symplegma mosaic
House: The House of the Menander (I.10.4.21)
Excavation Date: 1930-1931

Dimensions: 41 cm. x 41 cm.
Date: 80-50 B.C.E.

Excavation details:

- While Maiuri notes that the majority of the House of the Menander, including Cubiculum 21, was excavated between 1930 and 1931, the details of the excavation of this mosaic are not presented.[1]
- Maiuri does, however, mention the highly damaged condition of the mosaic, stating that the extensive foot traffic in antiquity was probably the cause of the deterioration.[2]

Conservation/Preservation:

- The mosaic has been subjected to obvious conservation treatments, particularly the consolidation of lacunae.

Bibliography:

Ling, R.J. 1990. "I 10, 4. Casa del Menandro." In *Pompei: Pitture e mosaici*. Vol. 2, *Regio I Parte II*, edited by I. Baldassare, 240-397. Rome: Istituto della enciclopedia italiana.

Maiuri, A. 1933. *La casa del Menandro e il suo tesoro di argenteria*. Vol. 1:8, 85. Rome: Libreria della stato.

[1] Maiuri 1933, 8.
[2] Maiuri 1933, 85.

Fig. A.11. Symplegma mosaic in situ in the House of the Menander (photograph by author).

Fig. A.12. Closer view of the Symplegma mosaic (photograph by author).

Title: Strigils mosaic
House: House of the Menander (I.10.4.46)
Excavation Date: 1930-1931

Dimensions: Undocumented
Date: 50-20 B.C.E.

Excavation details:

- Maiuri notes the discovery of the mosaic by describing its iconography and mentions that the mosaic was found to be highly damaged.[1]

Conservation/Preservation:

- No treatments for this mosaic have been documented, but it seems to have deteriorated completely since its excavation and replaced with a panel of white tesserae (fig. A14). Unfortunately, there is no record of this process.

Bibliography:

Ling, R.J. 1990. "I 10, 4. Casa del Menandro." In *Pompei: Pitture e mosaici*. Vol. 2, *Regio I Parte II*, edited by I. Baldassare, 240-397. Rome: Istituto della enciclopedia italiana.

Maiuri, A. 1933. *La casa del Menandro e il suo tesoro di argenteria*. Vol. 1:140. Rome: Libreria della stato.

[1] Maiuri 1933, 140.

Fig. A.13. Strigils mosaic from the House of the Menander (Ling 1990, 379)

Fig. A.14. Former location of the Strigils mosaic in the House of the Menander, replaced with all white tesserae (photograph by author).

Title: Street Musicians
House: Villa of Cicero (Outside Herculaneum Gate)
Excavation Date: April 26, 1763

Museum Catalogue #: 9985
Dimensions: c. 30cm. x 30cm.
Date: 80-50 B.C.E.

Excavation details:

- Although the condition of the mosaic is not recorded, Fiorelli relates Alcubierre's report that the mosaic was "very fine."[1] This probably refers more to the high quality of the opus vermiculatum mosaic, and not its excellent state of preservation.

Conservation/Preservation:

- According to Fiorelli, this mosaic was detached 2 days after it was excavated.[2]

Bibliography:

Fiorelli, G. 1860a. *Pompeianarum Antiquitatum Historia*. Vol. 1, part 1:150. Naples.

--------. 1860b. *Pompeianarum Antiquitatum Historia*. Vol. 1, part 2:105. Naples.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 168-171. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1860a, 150.
[2] Fiorelli 1860b, 105.

Fig. A.15. Street Musicians mosaic from the Villa of Cicero (photograph by author)

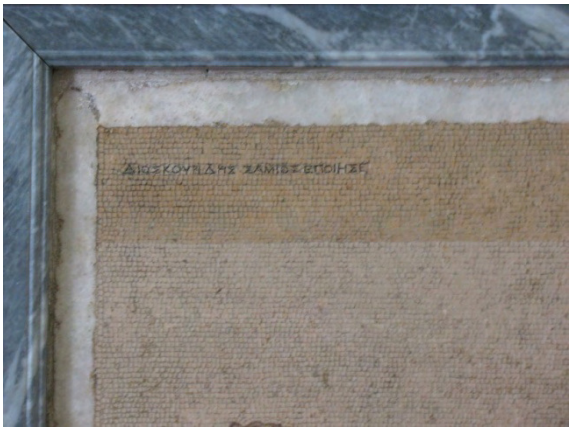

Fig. A.16. Close up of the mosaic signature of Dioskourides of Samos (photograph by author).

Fig. A.17. Close up of central figures of the Street Musicians mosaic(photograph by author).

Title: The Sorceress
House: Villa of Cicero (Outside Herculaneum Gate)
Excavation Date: March 8, 1764

Museum Catalogue #: 9987
Dimensions: c. 30cm. x 35cm.
Date: 80-50 B.C.E.

Excavation details:

- The discovery of this mosaic is announced through only its iconographic description. It is called a "*bellissimo moysayco*" by Alcubierre, but as with the other Dioskourides mosaic, it is likely that this refers to the quality of its scene and not its condition.[1]

Conservation/Preservation:

- Along with the Street Musicians mosaic also from the Villa of Cicero, this mosaic was detached 2 days after its discovery.[2]

Bibliography:

Fiorelli, G. 1860a. *Pompeianarum Antiquitatum Historia*. Vol. 1, Part 1:155. Naples.

--------. 1860b. *Pompeianarum Antiquitatum Historia*. Vol. 1, Part 2:108. Naples.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 168-171. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1860a, 155.
[2] Fiorelli 1860b, 108.

Fig. A.18. Sorceress mosaic from the Villa of Cicero (photograph by author)

Fig. A.19. Close up of central figures of the Sorceress mosaic (photograph by author).

Title: Medusa mosaic
House: House of the Vestals (VI.1.7.23)
Excavation Date: November 11, 1784

Museum Catalogue #: None
Dimensions: c. 50cm. in diameter
Date: 50-20 B.C.E.

Excavation details:

- The original excavation report, as compiled by Fiorelli, includes only a description of the mosaic, depicting "a very curious head of Medusa."[1]

Conservation/Preservation:

- According to Fiorelli, this mosaic was detached on December 13, 1787.[2]

Bibliography:

Bragantini, I. 1993a. "VI 1, 7. Casa delle Vestali." In *Pompei: Pitture e mosaici*. Vol. 4, *Regio VI Parte Prima*, edited by I. Baldassare, 5-49. Rome: Istituto della enciclopedia italiana.

Fiorelli, G. 1860a. *Pompeianarum Antiquitatum Historia*. Vol. 1, Part 1:136. Naples.

--------. 1860b. *Pompeianarum Antiquitatum Historia*. Vol. 1, Part 2:40. Naples.

[1] Fiorelli 1860a, 136.
[2] Fiorelli 1860b, 40.

Fig. A.20. Medusa mosaic from the House of the Vestals (photograph by author).

Fig. A.21. Detail, Medusa mosaic from the House of the Vestals (photograph by author).

Title: Satyr Mask
House: Bottega (VII.13.23.1)
Excavation Date: November 17, 1821

Museum Catalogue #: 109679
Dimensions: c. 15cm. x 15cm.
Date: 80-50 B.C.E.

Excavation details:

- Fiorelli reports the discovery of this mosaic and describes its iconography, but does not give any indication of its condition.[1]

Conservation/Preservation:

- Since this emblema had not yet been installed in a floor, it did not have to be detached. However, there are no records of how it was treated after excavation.

Bibliography:

Bragantini, I. 1997. "VII 13, 23. Bottega." In *Pompei: Pitture e mosaici*. Vol. 7, *Regio VII Parte II*, edited by I. Baldassare, 655-659. Rome: Istituto della enciclopedia italiana.

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:45. Naples.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 172-173. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1862, 45.

Fig. A.22. Satyr Mask from the Bottega (VII.13.23.1) (photograph by author).

Title: Silenus Mask
House: Bottega (VII.13.23.1)
Excavation Date: November 17, 1821

Museum Catalogue #: 109687
Dimensions: c. 15cm. x 15cm.
Date: 80-50 B.C.E.

Excavation details:

- Similar to its counterpart, the Satyr Mask mosaic (cat. 14), only the iconography of the mosaic is recorded upon its excavation.[1]

Conservation/Preservation:

- This mosaic was probably sent to the museum along with the Satyr Mask mosaic, but there is no record of this or any conservation treatments after excavation.

Bibliography:

Bragantini, I. 1997. "VII 13, 23. Bottega." In *Pompei: Pitture e mosaici*. Vol. 7, *Regio VII Parte II*, edited by I. Baldassare, 655-659. Rome: Istituto della enciclopedia italiana.

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:45. Naples.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 172-173. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1862, 45.

Fig. A.23. Silenus Mask from the Bottega (VIII.13.23.1) (photograph by author).

Title: Satyr Play mosaic
House: House of the Tragic Poet (VI.8.5.8)
Excavation Date: March 2, 1825

Museum Catalogue #: 9986
Dimensions: c. 40cm. x 40cm.
Date: End of the 1st c. B.C.E.

Excavation details:

- The excavation report mentions the discovery of this mosaic only by describing its iconography.[1]

Conservation/Preservation:

- There is no record of any post-excavation treatments to the mosaic. As Badoni notes, the mosaic was removed,[2] but this process was not documented.

Bibliography:

Badoni, F.P. and M. de Vos. 1993. "VI 8, 3.5. Casa del Poeta tragico." In *Pompei: Pitture e mosaici.* Vol. 4, *Regio VI Parte Prima*, edited by I. Baldassare, 527-603. Rome: Istituto della enciclopedia italiana.

Fiorelli, G. 1864. *Pompeianarum Antiquitatum Historia*. Vol. 3:59. Naples.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 171-172. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1864, 59.
[2] Badoni 1993, 546.

Fig. A.24. Satyr Play mosaic from the House of the Tragic Poet (photograph by author).

Title: Lion mosaic
House: House of the Centaur (VI.9.35.27)
Excavation Date: May 31, 1829

Museum Catalogue #: 10019
Dimensions: 168cm. in diameter
Date: 80-50 B.C.E.

Excavation details:

- Based on the extensive restoration to the mosaic, it was certainly in poor condition when it was discovered. However, the excavation report only discusses its iconography.[1]

Conservation/Preservation:

- As discussed in chapter 4, above, this mosaic has been subjected to both consolidation of lacunae and restoration of the figural scene. Unfortunately, there is no documentation of either of these events or the mosaic's removal.

Bibliography:

Bragantini, I. 1993b. "VI 9, 3.5. Casa del Centauro." In *Pompei: Pitture e mosaici*. Vol. 4, *Regio VI Parte Prima*, edited by I. Baldassare, 819-859. Rome: Istituto della enciclopedia italiana.

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:222. Naples.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 159-161. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1862, 222.

Fig. A.25. Lion mosaic from the House of the Centaur (photograph by author).

Fig. A.26. Close up of the central lion from the House of the Centaur (photograph by author).

Title: Masks *scendiletto*
House: House of the Faun (VI.12.2.53)
Excavation Date: October 1830

Museum Catalogue #: 9994
Dimensions: 49cm. x 281 cm.
Date: 100-80 B.C.E.

Excavation details:

- While the majority of the record of this mosaic's discovery discusses its iconography, Fiorelli does call the mosaic "a unique monument of conservation and of art."[1] However, it does not mention why its state of conservation is so unique. It is likely that this refers to its excellent physical condition upon discovery.

Conservation/Preservation:

- According to Fiorelli, this mosaic was sent to Naples on March 3, 1831.[2] Also, this mosaic is included in the group of five which Fiorelli mentions could "alone form a cabinet in the *Real Museo*."[3]

Bibliography:

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:241-242. Naples.

--------. 1864. *Pompeianarum Antiquitatum Historia*. Vol. 3:114. Naples.

Hoffman, A. and M. de Vos. 1994. "VI 12, 2. Casa del Fauno." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio V Parte II*, edited by I. Baldassarre, 80-141. Rome: Istituto della enciclopedia italiana.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 173. Berlin: Verlag von Walter de Gruyter.

Fig. A.27. *Scendiletto* with masks and fruit from the House of the Faun (photography by author).

[1] Fiorelli 1862, 241.
[2] Fiorelli 1864, 114.
[3] Fiorelli 1862, 242.

Title: Symplegma mosaic
House: House of the Faun (VI.12.2.28)
Excavation Date: October 1830

Museum Catalogue #: 27707
Dimensions: 39cm. x 37cm.
Date: 100-80 B.C.E.

Excavation details:

- The excavation report for this mosaic only mentions its iconography.[1] However, Hoffman believes that the lacunae in the lower right corner were caused by being struck by the opening door.[2]

Conservation/Preservation:

- No treatment for this mosaic has been recorded but it is clear that at least it was detached and the lacunae were filled. However, this mosaic is included in the group of five which Fiorelli mentions could "alone form a cabinet in the *Real Museo*."[3]

Bibliography:

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:241-242. Naples.

Hoffman, A. and M. de Vos. 1994. "VI 12, 2. Casa del Fauno." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio V Parte II*, edited by I. Baldassarre, 80-141. Rome: Istituto della enciclopedia italiana.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 176-177. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1862, 241.
[2] Hoffman 1994, 113.
[3] Fiorelli 1862, 242.

Fig. A.28. Symplegma mosaic from the House of the Faun (photograph by author).

Title: Marine Mosaic
House: House of the Faun (VI.12.2.35)
Excavation Date: November 1830

Museum Catalogue #: 9997
Dimensions: 117.3cm. x 117.5cm.
Date: 100-80 B.C.E.

Excavation details:

- While the excavation report does describe the mosaic in great detail,[1] it does not mention the condition of the mosaic, conspicuously leaving out the fact that a large lacuna exists in the middle of the mosaic.

Conservation/Preservation:

- The mosaic was clearly detached and its lacunae were consolidated, but there are no records of these actions. However, this mosaic is included in the group of five which Fiorelli mentions could "alone form a cabinet in the *Real Museo*."[2]

Bibliography:

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:241-242. Naples.

Hoffman, A. and M. de Vos. 1994. "VI 12, 2. Casa del Fauno." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio V Parte II*, edited by I. Baldassarre, 80-141. Rome: Istituto della enciclopedia italiana.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 149-151. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1862, 241.
[2] Fiorelli 1862, 242.

Fig. A.29. Marine mosaic from the House of the Faun (photograph by author).

Fig. A.30. Close up of the Marine mosaic from the House of the Faun (photograph by author).

Title: Tiger Rider
House: House of the Faun (VI.12.2.34)
Excavation Date: December 1830

Museum Catalogue #: 9991
Dimensions: 85cm. x 85cm.
Date: 100-80 B.C.E

Excavation details:

- Fiorelli describes the iconography of the mosaic in the excavation report and says that "the execution, the color, the style, the sentiment and the crispness of this incomparable monument cannot be described."[1] However, its condition upon discovery is not mentioned.

Conservation/Preservation:

- This mosaic is included in the group of five which Fiorelli mentions could "alone form a cabinet in the *Real Museo*."[2]

Bibliography:

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:242. Naples.

Hoffman, A. and M. de Vos. 1994. "VI 12, 2. Casa del Fauno." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio V Parte II*, edited by I. Baldassarre, 80-141. Rome: Istituto della enciclopedia italiana.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 158-159. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1862, 242.
[2] Fiorelli 1862, 242.

Fig. A.31. Tiger Rider mosaic from the House of the Faun (photograph by author).

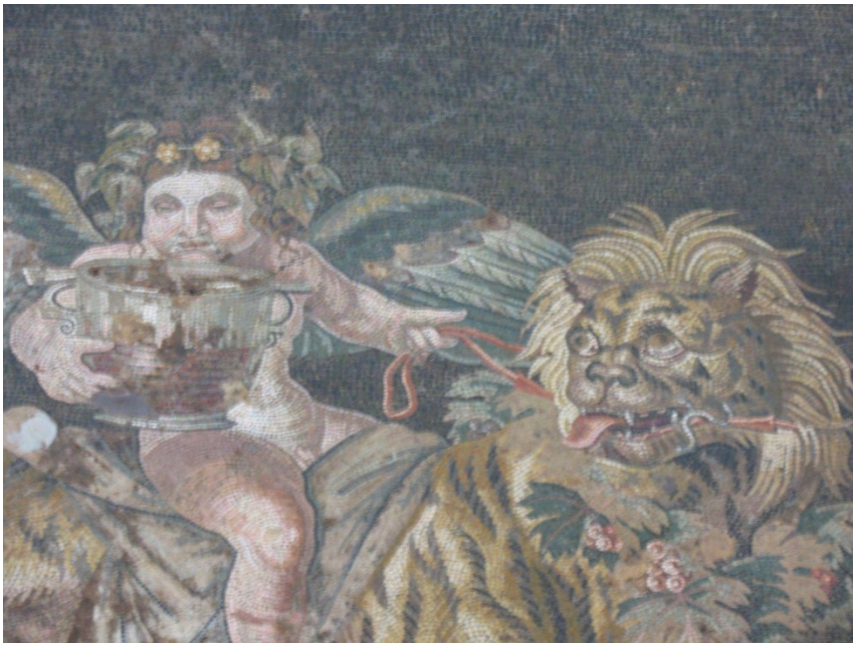

Fig. A.32. Close up of the Tiger Rider mosaic (photograph by author).

Title: Cat with a bird; Water fowl
House: House of the Faun (VI.12.2.30)
Excavation Date: December 1830

Museum Catalogue #: 9993
Dimensions: 50cm. x 50cm.
Date: 100-80 B.C.E.

Excavation details:

- Fiorelli, after describing its iconography, notes that this mosaic is "of an equal or greater quality than the others already found in the House of the Faun."[1]

Conservation/Preservation:

- This mosaic is included in the group of five which Fiorelli mentions could "alone form a cabinet in the *Real Museo*."[2]

Bibliography:

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:242. Naples.

Hoffman, A. and M. de Vos. 1994. "VI 12, 2. Casa del Fauno." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio V Parte II*, edited by I. Baldassarre, 80-141. Rome: Istituto della enciclopedia italiana.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 161-164. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1862, 242; this is several months before the discovery of the Alexander mosaic.
[2] Fiorelli 1862, 242.

Fig. A.33. Cat and Bird/Ducks mosaic from the House of the Faun (photograph by author).

Fig. A.34. Close up of the Cat and Bird/Ducks mosaic (photograph by author).

Title: Alexander Mosaic threshold
House: House of the Faun (VI.12.2.37)
Excavation Date: October 1831

Museum Catalogue #: 9990a-c
Dimensions: A: 67cm. x 136 cm.; B: 66cm. x 333; C: 64cm. x 131 cm.
Date: 100-80 B.C.E.

Excavation details:

- Fiorelli only describes the iconography of these three mosaics, despite the fact that one of them is severely damaged.[1]

Conservation/Preservation:

- According to Hoffman, "the *volpoca* figure behind the cobra of the central mosaic is repeated in the repaired patch on the right of the scene, carried out by a less experienced hand." However, it is not mentioned whether this restoration was performed in antiquity or after the mosaic was excavated.
- Hoffman believes that the clearly inferior craftsmanship of sections of mosaic C may have been due to repairs carried out after the 62 C.E. earthquake.[2] Also, although there is no documentation, the extensive damage and lacunae were consolidated after excavation.

Bibliography:

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:251. Naples.

Hoffman, A. and M. de Vos. 1994. "VI 12, 2. Casa del Fauno." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio V Parte II*, edited by I. Baldassarre, 80-141. Rome: Istituto della enciclopedia italiana.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 180. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1862, 251.
[2] Hoffman 1994, 124.

Fig. A.35. Central panel of Alexander exedra threshold mosaics (photograph by author).

Fig. A.36. Left panel of Alexander exedra threshold mosaics (photograph by author).

Fig. A.37. Right panel of Alexander exedra threshold mosaics (photograph by author).

Title: Alexander Mosaic
House: House of the Faun (VI.12.2.37)
Excavation Date: October 24, 1831

Museum Catalogue #: 10020
Dimensions: 317cm. x 548cm.
Date: 100-80 B.C.E.

Excavation details:

- According to Fiorelli, "This mosaic has been ruined since ancient times, in the part on which is represented the Greeks, and its restoration attempts were made before the eruption recovered it anew."[1] Unlike the restoration of the Alexander threshold mosaics (cat. 23), only the restoration of the non-figural elements of this mosaic are clearly defined, and it was not documented whether this was done in antiquity or after it was rediscovered.

Conservation/Preservation:

- Fiorelli mentions that, "a master carpenter[…]began constructing a wooden cover over the tablinum with the great mosaic in the House of the Faun."[2] This was built between November and December 1832.
- In August 1841, plaster from the walls of the Alexander exedra fell onto the mosaic. This was the catalyst for the decision to remove the mosaic. The architect Pietro Bianchi was consulted about how to successfully detach it,[3] and the first cuts were made to the mosaic in October 1843.[4] A month later, it was detached and temporarily moved to a street near the House of the Faun, then sent to Naples a few days later.[5]

Bibliography:

Ardovino, A. 2002a. "La ricerca sulla tecnologia ottocentesca: sguardo sull'ideologia selettiva della conservazione nell'ottocento, e riflessioni per il restauro di mosaici già restaurati. Il caso del mosaico di Alessandro di Pompei." In *I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002*, edited by Biscontin, G. and G. Druissi, 33-38. Venice: Edizioni Arcadia Ricerche.

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:251-264, 401. Naples.

--------. 1864. *Pompeianarum Antiquitatum Historia*. Vol. 3:192-194. Naples.

Hoffman, A. and M. de Vos. 1994. "VI 12, 2. Casa del Fauno." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio V Parte II*, edited by I. Baldassarre, 80-141. Rome: Istituto della enciclopedia italiana.

[1] Fiorelli 1862, 251.
[2] Fiorelli 1862, 264.
[3] Fiorelli 1862, 401.
[4] Fiorelli 1864, 192.
[5] Fiorelli 1864, 194.

Fig. A.38. The Alexander mosaic from the House of the Faun (photograph by author).

Fig. A.39. Close up of fallen Persian soldier and filled lacunae in the Alexander mosaic (photograph by author).

Fig. A.40. Close up of lacunae in the Alexander mosaic (photograph by author).

Title: Pigeon with Mirror mosaic
House: House of the Labyrinth (VI.11.9.45)
Excavation Date: September 10, 1834

Museum Catalogue #: 9980
Dimensions: 26.1cm. x 26.1cm.
Date: 70-60 B.C.E.

Excavation details:

- In the excavation report, the mosaic's iconography is described and later, it mentions that the mosaic was found with some damage in one of the corners.[1]

Conservation/Preservation:

- This mosaic, along with the Cockfight mosaic (cat. 26) discovered the same day, was torn (*svelto*) from the ground and sent to Naples.[2]

Bibliography:

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:316-317. Naples.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 166-167. Berlin: Verlag von Walter de Gruyter.

Strocka, V.M. 1994. "VI 11, 8-10. Casa del Labirinto." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio VI Parte II*, edited by I. Baldassarre, 1-70. Rome: Istituto dell enciclopedia italiana.

[1] Fiorelli 1862, 316-7.
[2] Fiorelli 1862, 317.

Fig. A.41. Pigeon with Mirror mosaic from the House of the Labyrinth (Strocka 1994, 49).

Title: Cockfight mosaic
House: House of the Labyrinth (VI.11.9.44)
Excavation Date: September 10, 1834

Museum Catalogue #: 9982
Dimensions: c. 42.4cm. x 46.5cm.
Date: 70-60 B.C.E.

Excavation details:

- Similar to the Pigeon with Mirror mosaic (cat. 25), found in an adjacent room, Fiorelli describes the iconography of the mosaic, then mentions that was found in good condition.[1]

Conservation/Preservation:

- According to Fiorelli, the Minister of Internal Affairs ordered that the mosaic be torn (*svelto*) from its location and sent to Naples.[2]

Biblography:

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:316-317. Naples.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 179-180. Berlin: Verlag von Walter de Gruyter.

Strocka, V.M. 1994. "VI 11, 8-10. Casa del Labirinto." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio VI Parte II*, edited by I. Baldassarre, 1-70. Rome: Istituto dell enciclopedia italiana.

[1] Fiorelli 1862, 316-7.
[2] Fiorelli 1862, 317.

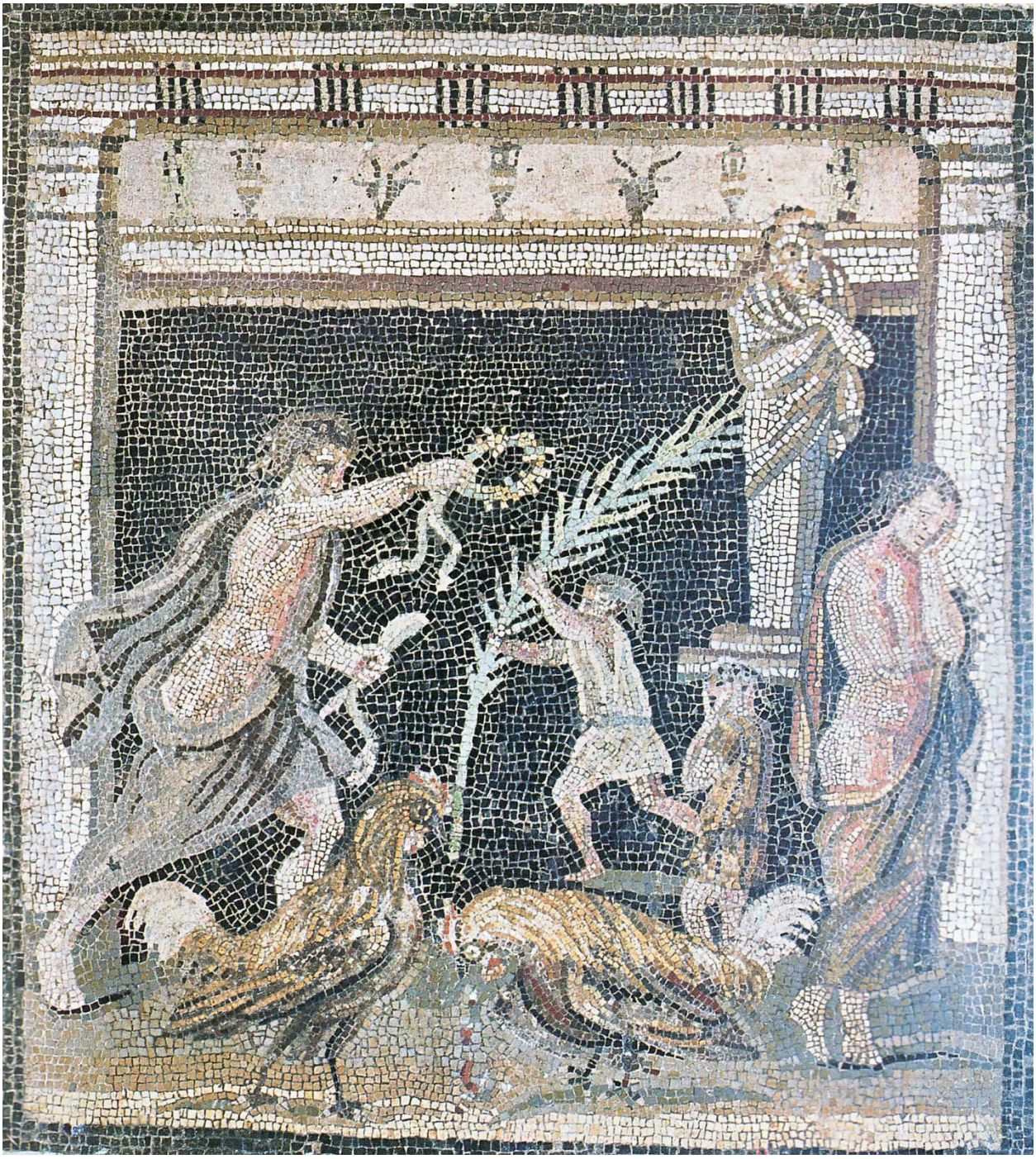

Fig. A.42. Cockfight mosaic from the House of the Labyrinth (de Caro 2001, 27).

Title: Neptune and Amphitrite
House: House of the Granduke of Tuscany (IX.2.27.d)
Excavation Date: 1870

Museum Catalogue #: 10007
Dimensions: 92.5cm. x 92.5cm.
Date: 80-50 B.C.E.

Excavation details:

- The excavation reports only mention the iconography of this mosaic with its discovery.[1]
- According to Bragantini, the mosaic was ripped (*strappato*) from Triclinium d in the House of the Granduke of Tuscany.[2]

Conservation/Preservation:

- Several lacunae in the mosaic have been consolidated and there seems to be restoration of some of the tesserae, although there is no record of whether it was done in antiquity or after the mosaic's rediscovery (fig. A.44).

Bibliography:

Barone, C. 1870. "Casa n.7 della via Stabiana." In *Giornale degli scavi di Pompei, nuova serie,* n.12, edited by G. Fiorelli, 9-12. Naples.

Bragantini, I. 1999. "IX 2, 27. Casa del Granduca di Toscana." In *Pompei: Pitture e mosaici.* Vol. 9, *Regio IX Parte II*, edited by I. Baldasare, 116-127. Rome: Istituto della enciclopedia italiana.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 174-175. Berlin: Verlag von Walter de Gruyter.

[1] Barone 1870, 10.
[2] Bragantini 1999, 119.

Fig. A.43. Neptune and Amphitrite mosaic from the House of the Granduke of Tuscany (photograph by author).

Fig. A.44. Close up of the Neptune and Amphitrite mosaic with visible restoration (photograph by author).

Title: Fish and Ducks mosaic
House: House of the Granduke of Tuscany (IX.2.27.e)
Excavation Date: 1870

Museum Catalogue #: 109371
Dimensions: 36cm. x 38cm.
Date: 80-50 B.C.E.

Conservation/Preservation:

- A lacuna on the right side of the mosaic has been consolidated. But unlike several other opus vermiculatum mosaics, such as the Woman's Portrait mosaic (cat. 35) and the Alexander mosaic (cat. 24), the tesserae that formed the regular, easily-reproduceable border was not restored.

Bibliography:

Bragantini, I. 1999. "IX 2, 27. Casa del Granduca di Toscana." In *Pompei: Pitture e mosaici.* Vol. 9, *Regio IX Parte II*, edited by I. Baldasare, 116-127. Rome: Istituto della enciclopedia italiana.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 154. Berlin: Verlag von Walter de Gruyter.

Fig. A.45. Fish and Ducks mosaic from the House of the Granduke of Tuscany (photograph by author).

Title: "Memento Mori"
House: Officina coriariorum of M. Vesovius Primus (I.5.2.h)
Excavation Date: 1874

Museum Catalogue #: 109982
Dimensions: 47cm. x 41cm.
Date: 80-50 B.C.E.

Conservation/Preservation:

- The long lacuna running down the left side of the mosaic was consolidated and is interspersed with some restoration of the tesserae. Although the restoration could have been done in antiquity similar to the Alexander threshold mosaics (cat. 23) and possibly the Lion mosaic from the House of the Faun (cat. 36).

Bibliography:

Bragantini, I. 1990. "I 5, 2. Conceria." In *Pompei: Pitture e mosaici*. Vol. I, *Regio I Parte I*, edited by I. Baldassare, 185-192. Rome: Istituto della enciclopedia italiana.

Fig. A.46. Memento Mori mosaic from the Officina coriariorum of M. Vesovium Primus (photograph by author).

Title: Gorgoneion
House: House of the Centenary (IX.8.3.12)
Excavation Date: May 1879 - September 1880

Museum Catalogue #: 112284
Dimensions: 120cm. x 89cm.
Date: End of the 1st c. B.C.E.

Conservation/Preservation:

- This mosaic was removed to the National Museum in 1881 but unfortunately, according to Coralini, "there are no notes about the methods in which the emblema was removed nor the successive preservation attempts."[1]

Bibliography:

Coralini, A. 2001. "I Pavimenti della Casa del Centenario a Pompei (IX 8, 3.6.a). I Temi Figurati." In *Atti VII Colloquio dell'AISCOM (Pompei, 22-25 marzo 2000)*, edited by A. Paribeni, 45-60. Ravenna: Edizioni del girasole.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 43-44. Berlin: Verlag von Walter de Gruyter.

Sampaolo, V. 1999. "IX 8, 3.7. Casa del Centenario." In *Pompei: Pitture e mosaici*. Vol. 9, *Regio IX Parte II*, edited by I. Baldassare, 903-1104. Rome: Istituto della enciclopedia italiana.

[1] Coralini 2001, 52.

Fig. A.47. Gorgoneion mosaic from the House of the Centenary (Sampaolo 1999, 980).

Title: Doves on Basin
House: House of the Mosaics Doves (VIII.2.34.n)
Excavation Date: 1885

Museum Catalogue #: 114281
Dimensions: c. 114cm. x 112.5cm.
Date: 80-50 B.C.E.

Excavation details:

- When the mosaic was excavated, it was described by Ruggiero as having been "covered by a layer of ancient lime, and that was the case maybe because the house, in which they were, was being restored."[1]

Conservation/Preservation:

- The mosaic was superficially cleaned and recovered after excavation for protection while it awaited removal.[2]
- Fiorelli requested that the mosaic "be detached and transported to this National Museum; this operation should be done with the greatest possible promptness and with all prudence."[3]

Bibliography:

Capri, P., ed. 1996. *Pompeii: Letters and Documents*. Volume 6: Febr. 1, 1882 - Dec. 29, 1885, 889-891. Rome.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 164. Berlin: Verlag von Walter de Gruyter.

Sampaolo, V. 1990b. "VIII 2, 34-35. Casa delle Colombe a mosaico." In *Pompei: Pitture e mosaici*. Vol. 8, *Regio VIII-Regio IX Parte I*, edited by I. Baldassarre, 264-290. Rome: Istituto della enciclopedia italiana.

[1] Capri 1996, 890.
[2] Capri 1996, 890.
[3] Capri 1996, 891.

Fig. A.48. Doves on Basin mosaic from the House of the Mosaic Doves (photograph by author).

Fig. A.49. Close up of one of the doves in the Doves on Basin mosaic (photograph by author).

Title: Lion mosaic
House: House of the Mosaic Doves (VIII.2.34.o)
Excavation Date: 1885

Museum Catalogue #: 114282
Dimensions: c. 100cm. x 100cm.
Date: 80-50 B.C.E.

Excavation details:

- Similar to the Doves mosaic from the same house, this mosaic was also found "covered by a layer of ancient lime."[1]
- The excavation reports note that, "The state of conservation of this mosaic cannot be called optimal…the pavement was found in many points detached."[2]

Conservation/Preservation Attempts:

- According to Ruggiero, "an assistant accurately cleaned these precious remains, ant they were covered for now, in that way nothing could damage them."[3]
- Later, the mosaic was sent to Naples, by orders of Fiorelli.[4]

Bibliography:

Capri, P., ed. 1996. *Pompeii: Letters and Documents*. Volume 6: Febr. 1, 1882 - Dec. 29, 1885, 889-891. Rome.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 155-156. Berlin: Verlag von Walter de Gruyter.

Sampaolo, V. 1990b. "VIII 2, 34-35. Casa delle Colombe a mosaico." In *Pompei: Pitture e mosaici*. Vol. 8, *Regio VIII-Regio IX Parte I*, edited by I. Baldassarre, 264-290. Rome: Istituto della enciclopedia italiana.

[1] Capri 1996, 890.
[2] Capri 1996, 890.
[3] Capri 1996, 890.
[4] Capri 1996, 891.

Fig. A.50. Lion mosaic from the House of the Mosaic Doves (photograph by author).

Fig. A.51. Close up of the Lion mosaic from the House of the Mosaic Doves (photograph by author).

Title: Marine mosaic
House: House of the Five Floors (VIII.2.16.o)
Excavation Date: August 8, 1890

Museum Catalogue #: 120117
Dimensions: 145cm. x 150cm.
Date: 80-50 B.C.E.

Excavation details:

- The excavation report which announces the discovery of this mosaic only describes its iconography.[1]

Conservation/Preservation:

- The long fracture through the middle of the mosaic was consolidated, but the process was not documented. The damage around the edges of the mosaic was also consolidated, and may have been caused during removal.

Bibliography:

Fiorelli, G. 1890. "Pompeii." In *Notizie degli scavi di antichità*, 291. Rome: Accademia Nazionale dei Lincei.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 151-152. Berlin: Verlag von Walter de Gruyter.

Sampaolo, V. 1990a. "VIII 2, 14-16." In *Pompei: Pitture e mosaici*. Vol. 8, *Regio VIII-Regio IX Parte I*, edited by I. Baldassarre, 72-93. Rome: Istituto della enciclopedia italiana.

[1] Sogliano 1890, 291.

Fig. A.52. Marine mosaic from the House of the Five Floors (photograph by author).

Fig. A.53. Close up of the Marine mosaic from the House of the Five Floors (photograph by author).

Title: Rape of the Leucippides
House: House of the Five Floors (VIII.2.16.s)
Excavation Date: September 1890

Museum Catalogue #: 120619
Dimensions: Original: 0.80 x 0.80m.; Visible: 0.24 x 0.45m.
Date: 80-50 B.C.E.

Excavation details:

- According to August Mau, this mosaic was found, damaged, leaned up against a wall inside the House of the Five Floors.[1] It is likely that the emblema was removed in antiquity after having been damaged, probably by the 62 C.E. earthquake.
- The archaeologists, recognizing how damaged the mosaic was, very carefully lifted it.[2]

Conservation/Preservation:

- The mosaic, which was already in fragmentary form when it was found, was stabilized by filling the areas with missing tesserae with a smooth, solid mortar. This consolidated the tesserae on the edges of the remaining figural scene and protected the mosaic from further tesserae loss.

Bibliography:

Fiorelli, G. 1890. "Pompeii." In *Notizie degli scavi di antichità*, 328. Rome: Accademia Nazionale dei Lincei.

Mau, A. 1892. "Scavi di Pompei." *RM* 7:3-25.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 174. Berlin: Verlag von Walter de Gruyter.

Sampaolo, V. 1990a. "VIII 2, 14-16." In *Pompei: Pitture e mosaici*. Vol. 8, *Regio VIII-Regio IX Parte I*, edited by I. Baldassarre, 72-93. Rome: Istituto della enciclopedia italiana.

[1] Mau 1892, 12.
[2] Fiorelli 1890, 328.

Fig. A.54. Rape of the Leucippides mosaic from the House of Five Floors (photograph by author).

Title: Woman's Portrait
House: Termopolio (VI.15.14.m)
Excavation Date: 1897

Museum Catalogue #: 124666
Dimensions: 16.5cm. x 21.4cm.
Date: 50-20 B.C.E.

Excavation details:

- Although this mosaic was discovered in a termopolio (tavern), according to Clarke, that was probably not its original setting.[1]

Conservation/Preservation:

- The mosaic has one consolidated lacuna in the lower left hand corner and the border tesserae in that same corner have been restored.

Bibliography:

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 178-179. Berlin: Verlag von Walter de Gruyter.

Sampaolo, V. 1994. "VI 15, 13.15. Termopolio." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio VI Parte II*, edited by I. Baldassare, 692-700. Rome: Istituto della enciclopedia italiana.

[1] Clarke 2003, 264.

Fig. A.55. Woman's Portrait mosaic from a termopolio (VI.15.14) (photograph by author).

Title: Lion mosaic
House: House of the Faun (VI.12.2.42)
Excavation Date: 1831

Dimensions: 75cm. x 87cm.
Date: 80-50 B.C.E.

Excavation details:

- According to Fiorelli, the mosaic was already very fragmented when it was found.[1] Since the mosaic was so fragmented, it would have been too difficult to remove, and was left in situ.[2]

Conservation/Preservation:

- Although Fiorelli notes that this mosaic is "*importantissimo*,"[3] there is no record of any conservation treatments. Since the mosaic has now completely deteriorated, it is likely that no in situ conservation was attempted.

Bibliography:

Fiorelli, G. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2:251-253. Naples.

Hoffman, A. and M. de Vos. 1994. "VI 12, 2. Casa del Fauno." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio V Parte II*, edited by I. Baldassarre, 80-141. Rome: Istituto della enciclopedia italiana.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 155. Berlin: Verlag von Walter de Gruyter.

[1] Fiorelli 1862, 251.
[2] Hoffman 1994, 133.
[3] Fiorelli 1862, 253.

Fig. A.56. Drawing of lost Lion mosaic from the House of the Faun (Hoffman 1994, 134).

Title: Marine mosaic
House: House of Cipius Pamphilus (VII.6.38.29)
Excavation Date: 1910

Dimensions: 58cm. in diameter
Date: 80-70 B.C.E.

Excavation details:

- According to Spano, the mosaic was already partially damaged when it was excavated."[1]

Conservation/Preservation:

- Unfortunately, the mosaic was stolen in 1976.[2] It is not recorded whether it was stolen from the site, or stolen after it was detached by the archaeologists. However, since the mosaic was never given an inventory number in the National Museum, it is likely that it was stolen directly from the site.

Bibliography:

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*, 153-154. Berlin: Verlag von Walter de Gruyter.

Sampaolo, V. 1997. "VII 6, 38. Casa di Cipius Pamphilus." In *Pompei: Pitture e mosaici*. Vol. 7, *Regio VII Parte II*, edited by I. Baldassare, 210-223. Rome: Istituto della enciclopedia italiana.

Spano, G. 1910. "Pompei." In *Notizie degli scavi di antichità*, Ser. 5, Vol. 7. Rome: Accademia Nazionale dei Lincei.

[1] Spano 1910, 556.
[2] Sampaolo 1997, 217.

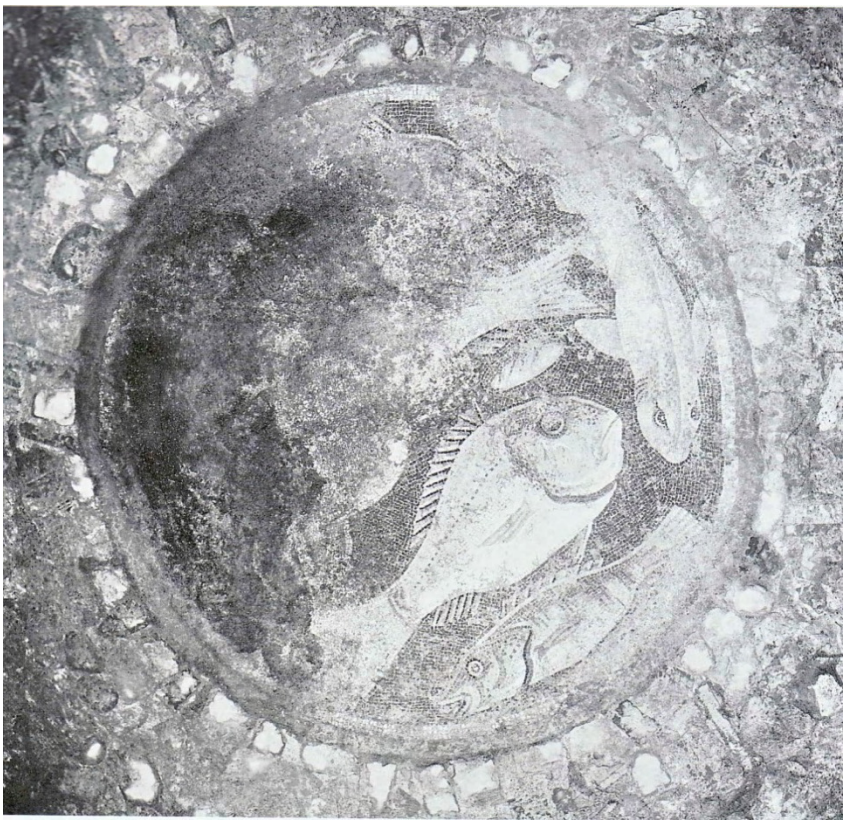

Fig. A.57. Marine mosaic from the House of Cipius Pamhilus (Sampaolo 1997, 218).

Fig. A.58. Empty space in the House of Cipius Pamphilus from where the Marine mosaic was removed (Sampaolo 1997, 217).

BIBLIOGRAPHY

Alberti, L., F. Mannuccia, L. Tartaglia, S. Tusa. 2004. "Conservazione e restauro musivo a Mozia, Salemi e Mazara del Vallo." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerina 9-13 aprile 2003*, edited by G. Meli, 212-236. Palermo: Libreria D. Flaccovio Editrice.

Ardovino, A. 2002a. "La ricerca sulla tecnologia ottocentesca: sguardo sull'ideologia selettiva della conservazione nell'ottocento, e riflessioni per il restauro di mosaici già restaurati. Il caso del mosaico di Alessandro di Pompei." In *I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002*, edited by Biscontin, G. and G. Druissi, 33-38. Venice: Edizioni Arcadia Ricerche.

--------. 2002b. "Problemi di filologia e sviluppo della tecnica del restauro e della conoscenza delle tecniche antiche sul mosaico." In *I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002*, edited by Biscontin, G. and G. Druissi, 23-31. Venice: Edizioni Arcadia Ricerche.

--------. 2004. "Manutenzione programmata e riposizionamento filologico. La stessa base di metodo e gli stessi operatori?" In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 274-278. Palermo: Libreria D. Flaccovio Editrice.

Ardovino, A., E. Gagetti, and S. Masseroli. 2002. "Bilancio di cinque anni di impiego di una scheda come strumento conoscitivo di tecnologie esecutive e succession di restauri." In *I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002*, edited by Biscontin, G. and G. Druissi, 141-154. Venice: Edizioni Arcadia Ricerche.

Ashurst, J., ed. 2007. *Conservation of Ruins*. Oxford: Elvesier Ltd.

Ashurst, J., and F. Dimes. ed. 1990. *Conservation of Building and Decorative Stone,* 2 vols. London: Butterworth-Heinemann.

Badoni, F.P. and M. de Vos. 1990. "I 7, 1. Casa di Paquius Proculus o di Cuspius Pansa." In *Pompei: Pitture e mosaici*. Vol. I, *Regio I Parte I*, edited by I. Baldassare, 483-552. Rome: Istituto della enciclopedia italiana.

--------. 1993. "VI 8, 3.5. Casa del Poeta tragico." In *Pompei: Pitture e mosaici.* Vol. 4, *Regio VI Parte Prima*, edited by I. Baldassare, 527-603. Rome: Istituto della enciclopedia italiana.

Baldassare, I., ed. 1990-2003. *Pompei: Pitture e mosaici*. 10 Vols. Rome: Istitutio della enciclopedia italiana.

Barone, C. 1870. "Casa n.7 della via Stabiana." In *Giornale degli scavi di Pompei, nuova serie,* n.12, edited by G. Fiorelli. Naples.

Bassier, C. 1978. "Some problems in the conservation of mosaics." In *Mosaics 1*, 67-87.

Bellini, A. 1998. "Progetto di conservazione e reversibilità." In *Progettare I restauri: orientamenti e metodi – indagini e materiali. Atti del convegno di studi, Bressanone 30 giugno-3 luglio 1998*, edited by Biscontin, G. and G. Driussi, 1-3. Venice: Edizioni Arcadia Ricerche.

Beltrame, D. 1998. "Progettare il restauro tra rumore ed informazione." In *Progettare I restauri: orientamenti e metodi – indagini e materiali. Atti del convegno di studi, Bressanone 30 giugno-3 luglio 1998*, edited by Biscontin, G. and G. Driussi, 117-126. Venice: Edizioni Arcadia Ricerche.

Ben Abed, A., ed. 2006. *Stories in Stone: Conserving Mosaics of Roman Africa*. Los Angeles: Getty Conservation Institute.

Berry, J., ed. 1998. *Unpeeling Pompeii*. Milan: Electa.

--------. 2007. *The Complete Pompeii*. London: Thames and Hudson.

Bianchi, A. and A. Ferroni. 1998. "Carta del rischio del patrimonio cultural schedatura conservative dei rivestimenti." In *Atti del V colloquio dell'Associazione Italiana per lo Studio e la Conservazione del Mosaico, Roma, 3-6 novembre 1997*, edited by F. Guidobaldi, et al., 527-536. Ravenna: Edizioni del Girasole.

Biscontin, G., ed. 1986. *Manutenzione e conservazione del costruito fra tradizione ed Innovazione. Atti del convegno di Studi, Bressanone 24-27 giugno 1986*. Padua: Libreria Progetto Editore.

Biscontin, G. and G. Driussi., eds. 1998. *Progettare i restauri: orientamenti e metodi – indagini e materiali. Atti del convegno di studi, Bressanone 30 giugno-3 luglio 1998*. Venice: Edizioni Arcadia Ricerche.

--------. 2002. *I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002.* Venice: Edizioni Arcadia Ricerche S.r.l.

Bragantini, I. 1990. "I 5, 2. Conceria." In *Pompei: Pitture e mosaici*. Vol. I, *Regio I Parte I*, edited by I. Baldassare, 185-192. Rome: Istituto della enciclopedia italiana.

--------. 1993a. "VI 1, 7. Casa delle Vestali." In *Pompei: Pitture e mosaici*. Vol. 4, *Regio VI Parte Prima*, edited by I. Baldassare, 5-49. Rome: Istituto della enciclopedia italiana.

--------. 1993b. "VI 9, 3.5. Casa del Centauro." In *Pompei: Pitture e mosaici*. Vol. 4, *Regio VI Parte Prima*, edited by I. Baldassare, 819-859. Rome: Istituto della enciclopedia italiana.

--------. 1997. "VII 13, 23. Bottega." In *Pompei: Pitture e mosaici*. Vol. 7, *Regio VII Parte II*, edited by I. Baldassare, 655-659. Rome: Istituto della enciclopedia italiana.

--------. 1997. "VII 16 *(Ins. Occ.)*, 17. Casa di Ma. Castricius." In *Pompei: Pitture e mosaici*. Vol. 7, *Regio VII Parte II*, edited by I. Baldassare, 887-946. Rome: Istituto della enciclopedia italiana.

--------. 1999. "IX 2, 27. Casa del Granduca di Toscana." In *Pompei: Pitture e mosaici.* Vol. 9, *Regio IX Parte II*, edited by I. Baldasare, 116-127. Rome: Istituto della enciclopedia italiana.

Bragantini, I., M. de Vos, F. Badoni, eds.. 1981. *Pompei 1748-1980: I tempi della documentazione*. Rome: Multigrafica Editrice.

--------. 1981-1986. *Pitture e Pavimenti di Pompei,* 3 vols. Rome: Ministero per I Beni Culturali ed Ambientalo, Istituto Centrale per il Catalogo e la Documentazione.

Bragantini, I., P. Gherardini, F. Badoni, V. Sampaolo, eds.. 1992. *Pitture e pavimenti di Pompei, Indici I-III*. Rome: Istituto Centrale per il Catalogo e la Documentazione.

Brandi, C. 1963. *Teoria del restauro*. Rome: Edizioni di storia e letterature.

Buys, S. and V. Oakley. *The Conservation and Restoration of Ceramics.* Boston: Butterworth Heinemann.

Caldararo, N.C. 1987. "An Outline History of Conservation in Archaeology and Anthropology as Presented through Its Publications." *Journal of the American Institute for Conservation*, Vol. 26, No. 2, pp. 85-104.

Capri, P., ed. 1996. *Pompeii: Letters and Documents*. Volume 6: Feb. 1, 1882 - Dec. 29, 1885. Rome.

Carandini, A. 1982. *Filosofiana, the villa of Piazza Armerina: the image of a Roman aristocrat at the time of Constantine*. Palermo: S.F. Flaccovio.

Casiello, S. 1986. "Tecniche tradizionali di intervento per la conservazione delle strutture fuoriterra nell'edilizia Pompeiana." In *Manutenzione e conservazione del costruito fra tradizione ed Innovazione. Atti del convegno di Studi, Bressanone 24-27 giugno 1986*, edited by Biscontin, 319-331. G. Padua: Libreria Progetto Editore.

Christensen, A. 2006. "From Palaces to Pompeii: The Architectural and Social Context of Hellenistic Floor Mosaics in the House of the Faun." Ph.D. diss., Florida State University.

Chryssopoulos, D. 2003. "Aesthetic restoration and presentation of mosaics." In *Mosaics Make a Site: The Conservation in situ of Mosaics on Archaeological Sites. Proceedings of the VIth ICCM Conference, 1996*, edited by D. Michaelides, 309-312. Rome: ICCROM.

Clarke, J. 1991. *The Houses of Roman Italy, 100 B.C.-A.D. 250: Ritual, Space, and Decoration*. Berkeley: University of California Press.

--------. 2003. *Art in the Lives of Ordinary Romans: Visual Representation and Non-Elite Viewers in Italy, 100 B.C.-A.D. 250*. Berkeley: University of California Press.

Clarke, W. 1847. *Pompeii: It's Destruction and Re-Discovery*. London: C. Cox.

Coralini, A. 2001. "I Pavimenti della Casa del Centenario a Pompei (IX 8, 3.6.a). I Temi Figurati." In *Atti VII Colloquio dell'AISCOM (Pompei, 22-25 marzo 2000)*, edited by A. Paribeni, 45-60. Ravenna: Edizioni del girasole.

d'Ambrosio, A. 2000. *Pompeii*. Los Angeles: Getty Trust Publications.

Darmon, J.P. 2004. "Conclusioni." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 698-700. Palermo: Libreria D. Flaccovio Editrice.

Daszewski, W.A. 1985. *Corpus of Mosaics from Egypt, Vol. I: Hellenistic and Early Roman Period*. Mainz am Rhein: P. Von Zabern.

de Caro, S. 1999. *National Archaeological Museum of Naples*. Naples: Electa.

--------. 2001. *I mosaici la casa del fauno: guida alla collezione*. Naples: Electa.

de Guichen, G. and R. Nardi. 2006. "Mosaic Conservation: 50 Years of Modern Practice." In *Newsletter 21.1 (Spring 2006)*. Los Angeles: Getty Conservation Institute.

De Palma, A., L. Notturni, and A. Torsello. 2002. "Metodologie informatiche per la conoscenza e la conservazione delle superfici musive." In *I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002*, edited by Biscontin, G. and G. Druissi, 657-666. Venice: Edizioni Arcadia Ricerche.

De Puma, R. 1969. "The Roman Fish Mosaic." Ph.D. diss., Bryn Mawr College.

de Vos, M. 1984. "Pavimenti e mosaici." In *Pompei 79: Raccolta di studi per il decimonono centinario dell'eruzione vesuviana*, edited by Fausto Zevi, 161-176. Naples: Gaetano Macchiaroli Editore.

delle Ruote, G. R., F. Attardo, S. Frizzi, C. Martinelli, F. Toso. 2004. "Il trattamento delle lacune sui manufatti musivi: metodi e soluzioni." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 372-375. Palermo: Libreria D. Flaccovio Editrice.

dell'Orte, L, ed. 1990. *Restaurare Pompei*. Milan: Sugarco Edizioni.

Desceoudres, J.-P. 1996. "VII 4, 31.51. Casa dei capitelli colorati." In *Pompei: Pitture e mosaici*. Vol. 6, *Regiones VI Parte III, VII Parte I*, edited by I. Baldassare, 996-1107. Rome: Istituto della enciclopedia italiana.

Descoeudres, J.-P., P. Allison, D. Harrison, eds. 1994. *Pompeii Revisited: The life and death of a Roman Town*. Sydney: MeditArch.

Dunbabin, K.M.D. 1979. "Technique and Materials of Hellenistic Mosaics." *AJA* 83,3:265 277.

--------. 1999. *Mosaics of the Greek and Roman World*. Cambridge: Cambridge University Press.

--------. 2004. "Mosaics and Culture: East and West." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 28-31. Palermo: Libreria D. Flaccovio Editrice.

Fiorelli, G. 1860a. *Pompeianarum Antiquitatum Historia*. Vol. 1, part 1. Naples.

--------. 1860b. *Pompeianarum Antiquitatum Historia*. Vol. 1, part 2. Naples.

--------. 1862. *Pompeianarum Antiquitatum Historia*. Vol. 2. Naples.

--------. 1864. *Pompeianarum Antiquitatum Historia*. Vol. 3. Naples.

--------. 1870. *Giornale degli scavi de Pompei, nuova serie*, n.12. Naples.

--------. 1890. "Pompeii." In *Notizie degli scavi di antichità*. Rome: Accademia Nazionale dei Lincei.

Giudisce, S. and M. Valentini. 2002. "L'emblema della domus di Ma. Castricius a Pompei (VII, 16, 17): problem di conservazione." In *I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002*, edited by Biscontin, G. and G. Druissi, 165-174. Venice: Edizioni Arcadia Ricerche.

Giulia, C. and G. de Marco. 1986. "Il controllo della vegetazione nelle zone archeologiche e monumentali" In *Manutenzione e conservazione del costruito fra tradizione ed Innovazione. Atti del convegno di Studi, Bressanone 24-27 giugno 1986*, edited by Biscontin, 553-570. G. Padua: Libreria Progetto Editore.

Giusti, A. 1994. "Filling Lacunae in Florentine Mosaic and Tessera Mosaic: Reflections and Proposals." In *Restoration: Is It Acceptable?*, edited by A. Oddy, 145-152. London: The Trustees of the British Museum.

Goethe, J.W. 1970. *Italian Journey.* Translated by W.H. Auden and E. Mayer. London: Penguin Books.

Goodburn-Brown, D. 1992. "The lifting of Roman floor and wall structures." In *Retrieval of Objects from Archaeological Sites*, edited by R. Payton. Wales: Archetype Publications.

Gosden, C. and Y. Marshall. 1999. "The Cultural Biography of Objects." *World Archaeology* 31.2:169-178.

Guidobaldi, F. and A. Mecchi. 2004. "Trattamenti superficial per il recupero del cromatismo originale dei pavimenti marmorei e musivi." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 303-309. Palermo: Libreria D. Flaccovio Editrice.

Guidobaldi, F. and A. Paribeni., eds. 1998. *Atti del V colloquio dell'Associazione Italiana per lo Studio e la Conservazione del Mosaico*. Ravenna: Edizioni del Girasole.

Guidobaldi, F. and F. Scoppola. 2004. "Rapporto del gruppo di lavoro: sistemi di protezione, criteri per una valorizzazione e una fruizione sostenibile." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 553-555. Palermo: Libreria D. Flaccovio Editrice.

Guzzardi, L. 2004. "Esigenze di sicurezza e problem di tutela in un sito archeologico Musealizzato." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 252-259. Palermo: Libreria D. Flaccovio Editrice.

Harris. J. 2007. *Pompeii Awakened: A Story of Rediscovery*. London: I.B. Tauris & Co. Ltd.

Hoffman, A. and M. de Vos. 1994. "VI 12, 2. Casa del Fauno." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio V Parte II*, edited by I. Baldassarre, 80-141. Rome: Istituto della enciclopedia italiana.

Hosmer Jr., C.B. 1981. *Preservation Comes of Age*. Vol. 2. Charlottesville: University of Virginia Press.

Hossein, F. 2002. "Disciplinary Knowledge in Culture and Conservation of the Mosaics." In *I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002*, edited by Biscontin, G. and G. Druissi, 715-726. Venice: Edizioni Arcadia Ricerche.

ICCM. 1994. *Conservation, Protection, Presentation, Fifth conference of the International Committee for the Conservation of Mosaics, Faro and Conimbriga 1993*. Conimbriga: ICCM.

ICCROM. 1983. *Mosaics No. 2: Safeguard, Carthage 1978, Perigueux 1980*. Rome: ICCROM.

ICOM. 1974. "ICOM Guidelines for Loans." *ICOM News* 27:3-4. Paris: ICOM.

ICOMOS. 1993. *Guidelines for Education and Training in the Conservation of Monuments, Ensembles, and Sites*. Paris: ICOMOS.

--------. 1994. *The Venice Charter: 1964-1994*. Paris: ICOMOS.

Johnson, P. 1980. "Mosaics in Danger." *Current Archaeology* 71:364-7.

Jokilehto, J. 1999. *A History of Architectural Conservation*. Oxford: Butterworth-Heinemann.

--------. 2007. "Conservation concepts." In *Conservation of Ruins*, edited by J. Ashurst, 1-9. Oxford: Elvesier Ltd.

Laurenti, M.C. 2004. "Dall'intervento manutentivo al restauro del restauro." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 556-561. Palermo: Libreria D. Flaccovio Editrice.

Lewis, W.S., ed. 1948. *Horace Walpole's Correspondence with Thomas Gray, Richard West, and Thomas Ashton, vol. I*. New Haven: Yale University Press.

Ling, R.J. 1990. "I 10, 4. Casa del Menandro." In *Pompei: Pitture e mosaici*. Vol. 2, *Regio I Parte II*, edited by I. Balassare, 240-397. Rome: Istituto della enciclopedia italiana.

--------. 1998. *Ancient Mosaics*. London: British Museum.

--------. 2005. *Pompeii: History, Life, & Afterlife*. Stroud: Tempus Publishing Ltd.

Lyons, C. 2003. "Archaeology, Conservation, and the Ethics of Sustainability." In *Theory and Practice in Mediterranean Archaeology: Old World and New World Perspectives*, edited by J. Papadopoulos and R. Leventhal, 299-308. Los Angeles: Regents of the University of California.

Maiuri. A. 1933. *La casa del Menandro e il suo tesoro di argenteria*. 2 vols. Rome: Libreria dello Stato.

--------. 2000. *La Casa Pompeiana: Struttura, ambient, storia nella magistrale descrizione d'un grande archeologo*. Naples: Generoso Procaccini.

Margalit, Z. 2003. "The conservation of mosaics *in situ*: an alternative to shelters." In *Mosaics Make a Site: The Conservation in situ of Mosaics on Archaeological Sites. Proceedings of the VIth ICCM Conference, 1996*, edited by D. Michaelides, 299-305. Rome: ICCROM.

Marino, L. and R. Paone. 1986. "Contributi alla definizione del 'restauro archeologico': studi e ricerche preliminary." In *Manutenzione e conservazione del costruito fra tradizione ed Innovazione. Atti del convegno di Studi, Bressanone 24-27 giugno 1986*, edited by Biscontin, 11-21. G. Padua: Libreria Progetto Editore.

Mau, A. 1882. *Geschichte der decorativen Wandmalerei in Pompeji*. Berlin: Reimer.

--------. 1892. "Scavi di Pompei." *RM* 7:3-25.

Meli, G., ed. 2004. *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia, Piazza Armerina 9-13 aprile 2003*. Palermo: Libreria D. Flaccovio Editrice.

Menicou, M., C. Fiori, and M. Macchiarola. 2003. "Examples of deterioration following preservation works on mosaics *in situ*." In *Mosaics Make a Site: The Conservation in situ of Mosaics on Archaeological Sites. Proceedings of the VIth ICCM Conference, 1996*, edited by D. Michaelides, 225-233. Rome: ICCROM.

Merola, M. 2006. "Alexander Piece by Piece." *Archaeology Magazine* 59(1):36-40.

Miceli, G. 2004. "Colonizzazione e processi di deterioramento causati da cianobatteri e alghe nei mosaici di Piazza Armerina, Mozia e Selinunte." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 663-667. Palermo: Libreria D. Flaccovio Editrice.

Michaelides, D. 2003a. "The International Committee for the Conservation of Mosaics." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 32-36. Palermo: Libreria D. Flaccovio Editrice.

Michaelides, D., ed. 2003b. *Mosaics Make a Site: The Conservation in situ of Mosaics on Archaeological Sites. Proceedings of the VIth ICCM Conference, 1996*. Rome: ICCROM.

Ministero per I Beni e le Attività Culturali. 2007. *Museo Archaeologico Nazionale di Napoli – Museo Home Page*. http://marcheo.sanc.remuna.org/ (30 October 2007).

Misiani, A. 2004. "La attività e le funzioni della manutenzione programmata nell'ambito della gestione dei siti archeologici." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 546-552. Palermo: Libreria D. Flaccovio Editrice.

Muceli, C. 2004. "Ripari ed elementi protettivi di siti archeologici e superfici musive: soluzioni Innovative." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 357-362. Palermo: Libreria D. Flaccovio Editrice.

Nardi, R. 1997. "The Treatment of Mosaics." In "The Conservation of Mosaics In Situ." *Getty Conservation Institute Newsletter* 12.1. Los Angeles: J. Paul Getty Trust.

--------. 2002. "La conservazione e il restauro dei mosaici di Zeugma." In *I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002*, edited by Biscontin, G. and G. Druissi, 275-300. Venice: Edizioni Arcadia Ricerche.

--------. 2003. "The treatment of mosaics *in situ*," In *Mosaics Make a Site: The Conservation in situ of Mosaics on Archaeological Sites. Proceedings of the VIth ICCM Conference, 1996*, edited by D. Michaelides, 187-202. Rome: ICCROM.

--------. 2004. "Zeugma: L'intervento di conservazione 2000-2003." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 145-153. Palermo: Libreria D. Flaccovio Editrice.

Neguer, J. 2004. "Vulnerability Assessment and Conservation Management Maintenance Planning of In-Situ Exposed Mosaics." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 534-537. Palermo: Libreria D. Flaccovio Editrice.

Not, R. 2004a. "Le indagini scientifiche su alcuni mosaici pavimentali siciliani. Proposta di una metodologia di studio propedeutico all'intervento di restauro." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 422-434. Palermo: Libreria D. Flaccovio Editrice.

--------. 2004b. "Rappresentativi esempi di indagini biologiche sui mosaici pavimentali esposti all'aperto." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 668-672. Palermo: Libreria D. Flaccovio Editrice.

Oddy, A. 1994. *Restoration: Is It Acceptable?* London: The Trustees of the British Museum.

Oddy, A. and D. Linstrum. 1990. Series Editors' Preface to *Conservation of Building and Decorative Stone*. 2 vols., edited by J. Ashurst and F. Dimes. London: Butterworth Heinemann.

Oehler, F. 1844. *Commentatio de M. Terentii Varronis Satura Menippea*. Lipsiae: Typis et Sumptibus Godofr. Bassi.

Pagano, M. 1994. "Metodologia dei restauri borbonici a Pompei ed Ercolano." In *Rivista di Studi Pompeiani*, volume 5: 1991-1992. Rome: L'erma di Bretschneider.

Papadopoulos, J. and R. Leventhal. 2003. *Theory and Practice in Mediterranean Archaeology: Old World and New World Perspectives*. Los Angeles: Regents of the University of California.

Paribeni, A., ed. 2001. *Atti VII Colloquio dell'AISCOM (Pompei, 22-25 marzo 2000)*. Ravenna: Edizioni del girasole.

Parslow, C. 1995. *Rediscovering Antiquity*. Cambridge: Cambridge University Press.

Pellegrino, L. 2004. "La material e i segni della storia." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 453-465. Palermo: Libreria D. Flaccovio Editrice.

Pernice, E. 1938. *Pavimente und Figürliche Mosaiken*. Berlin: Verlag von Walter de Gruyter.

Pertot, G. 2002. " Gli interventi sui mosaici nel cantiere archeologico nelle relazioni inviate a '*Notizie degli scavi di antichità*." In *I Mosaici: Cultura, Tecnologia, Conservazione. Atti del convegno di studi, Bressanone 2-5 luglio 2002*, edited by Biscontin, G. and G. Druissi, 39-48. Venice: Edizioni Arcadia Ricerche.

Pisapia, M. 2004. "Il complesso musivo pavimentale dell'ala occidentale del museo archeologico nazionale di Napoli: un mosaico di mosaico." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia.Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 60-70. Palermo: Libreria D. Flaccovio Editrice.

Podany, J. 2006. "From Floor to Wall: Lifting and Exhibition Practices Applied to Ancient Floor Mosaics," In *Stories in Stone: Conserving Mosaics of Rman Africa*, edited by A. Ben Abed, 115-27. Los Angeles: Getty Conservation Institute.

Podany, J., N. Agnew, and M. Demas. 1994. "Preservation of Excavated Mosaics by Reburial: Evaluation of Some Traditional and Newly Developed Materials and Techniques." In *Conservation, Protection, Presentation, Fifth conference of the International Committee for the Conservation of Mosaics, Faro and Conimbriga 1993*, edited by the ICCM, 1-13. Conimbriga: ICCM.

Richardson, L. 1988. *Pompeii*. Baltimore: Johns Hopkins University Press.

Associazione internazionale Amici di Pompei. 1987-2007. *Rivista di studi pompeiani*. Rome: L'Erma di Bretschneider.

Rizzi, G. 2007. Preface to *Conservation of Ruins*, edited by John Ashurst. Oxford: Elvesier Ltd.

Roby, T. 2006a. "Lessons Learned: A Report on the 2005 ICCM Conference." *Getty Conservation Institute* 21.1. Los Angeles: J. Paul Getty Trust.

--------. 2006b. "The Conservation of Mosaics in Situ: Preserving Context and Integrity." In *Stories in Stone: Conserving Mosaics of Roman Africa*, edited by A. Ben Abed, 101-14. Los Angeles: Getty Conservation Institute.

Roby, T. and J. Levin. 2002. "Conserving Mosaics in Tunisia." *Getty Conservation Institute Newsletter* 17.1. Los Angeles: J. Paul Getty Trust.

Salvatore, M. 2004. "Le coperture nelle aree archeologiche, status quaestionis e prospettive." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 492-499. Palermo: Libreria D. Flaccovio Editrice.

Sampaolo, V. 1990a. "VIII 2, 14-16." In *Pompei: Pitture e mosaici*. Vol. 8, *Regio VIII-Regio IX Parte I*, edited by I. Baldassarre, 72-93. Rome: Istituto della enciclopedia italiana.

--------. 1990b. "VIII 2, 34-35. Casa delle Colombe a mosaico." In *Pompei: Pitture e mosaici*. Vol. 8, *Regio VIII-Regio IX Parte I*, edited by I. Baldassarre, 264-290. Rome: Istituto della enciclopedia italiana.

--------. 1994. "VI 15, 13.15. Termopolio." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio VI Parte II*, edited by I. Baldassare, 692-700. Rome: Istituto della enciclopedia italiana.

--------. 1997. "VII 6, 38. Casa di Cipius Pamphilus." In *Pompei: Pitture e mosaici*. Vol. 7, *Regio VII Parte II*, edited by I. Baldassare, 210-223. Rome: Istituto della enciclopedia italiana.

--------. 1999. "IX 8, 3.7. Casa del Centenario." In *Pompei: Pitture e mosaici*. Vol. 9, *Regio IX Parte II*, edited by I. Baldassare, 903-1104. Rome: Istituto della enciclopedia italiana.

Santalucia, F. 2004. "La manutenzione programmata come risultato delle microanalisi." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 245-251. Palermo: Libreria D. Flaccovio Editrice.

Silva, E. 1801. *Dell'arte dei giardini Inglese*. Milan: Genio Topografico.

Soprintendenza archeological di Pompeii. 2004a. *Associazione* "*Amici di Pompei.*" http://www2.pompeiisites.org/database/pompei/Pompei2.nsf/pagine/BE21AB59872018B3C1256ABA00271322?OpenDocument.

Soprintendenza archeological di Pompeii. 2004b. *Le techniche di scavo e di restauro*. http://www2.pompeiisites.org/database/pompei/Pompei2.nsf/pagine/991B02320FDFD12FC1256ABF003CBE56?OpenDocument.

Spano, G. 1910. "Pompei." In *Notizie degli scavi di antichità*, Ser. 5, Vol. 7. Rome: Accademia Nazionale dei Lincei.

Spinazzola, V. 1953. *Pompei alla luce degli scavi nuovi di via dell'abbondanza (anni 1910-1923)*. 2 vols. Rome: La libreria dello stato.

Stanley-Price, N. 1997. "The Roman villa at Piazza Armerina, Sicily." In *The conservation of archaeological sites in the Mediterranean area*, edited by M. de la Torre, 65-84. Los Angeles: The J. Paul Getty Trust.

--------. 2003. "Site Preservation and Archaeology in the Mediterranean Region." In *Theory and Practice in Mediterranean Archaeology: Old World and New World Perspectives*, edited by J. Papadopoulos and R. Leventhal, 269-84. Los Angeles: Regents of the University of California.

Stanley-Price, N. and G. Ponti. 2003. "Protective enclosures for mosaic floors: a review of Piazza Armerina, Sicily, after forty years." In *Mosaics Make a Site: The Conservation in situ of Mosaics on Archaeological Sites. Proceedings of the VIth ICCM Conference, 1996*, edited by D. Michaelides, 275-282. Rome: ICCROM.

Stanley-Price, N., M.K. Talley, Jr., and A.M. Vaccaro, eds. 1996. *Historical and Philosophical Issues in the Conservation of Cultural Heritage*. Los Angeles: Getty Conservation Institute.

Stefinlongo, G. Battista. 1986. "L'erosione dell'immagine." In *Manutenzione e conservazione del costruito fra tradizione ed Innovazione. Atti del convegno di Studi, Bressanone 24-27 giugno 1986*, edited by Biscontin, G. 23-31. Padua: Libreria Progetto Editore.

Strocka, V.M. 1994. "VI 11, 8-10. Casa del Labirinto." In *Pompei: Pitture e mosaici*. Vol. 5, *Regio VI Parte II*, edited by I. Baldassarre, 1-70. Rome: Istituto dell enciclopedia italiana.

Twain, M. 2004. Reprint. *The Innocents Abroad*. New York: Dover Publications. Original edition, Hartford: American Publishing Company, 1869.

UNESCO. 1957. "Records of the General Conference, Ninth Session, New Delhi 1956: Resolutions." Paris: UNESCO.

Vaccaro, A. 2003. "Philosophies favouring *in situ* conservation." In *Mosaics Make a Site: the conservation in situ of mosaics on archaeological sites VIth conference of the International Committee for the Conservation of Mosaics, Nicosia,Cyprus, 24-28 October 1996*, edited by D. Michaelides, 17-23. Rome: ICCM.

Vahleni, I. 1858. *In M. Terrentii Varronis, Saturarum Menippearum reliquias coniectanea*. Lipsiae: Aedibus B.G. Teubneri.

Villa, B. 2004. "Tecniche innovative per il rilievo e la rappresentazione dei siti archeologici." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 340-344. Palermo: Libreria D. Flaccovio Editrice.

Villari, G. 2004. "La musealizzazione di un sito archeologico." In *Apparati musivi antichi nell'area del Mediterraneo: conservazione programmata e recupero contribute analitici alla carta del rischio: Atti del I convegno internazionale di studi la material e I segni della storia. Piazza Armerinca 9-13 aprile 2003*, edited by G. Meli, 345-349. Palermo: Libreria D. Flaccovio Editrice.

Viollet-le-Duc, E. 1854. *The Foundations of Architecture*. Translated by K. Whitehead (1990). New York: G. Braziller.

Wallace-Hadrill, A. 1994. *Houses and Society in Pompeii and Herculaneum*. Princeton: Princeton University Press.

Westgate, R. 2000. "*Pavimenta atque emblemata vermiculata*: regional styles in Hellenistic mosaic and the first mosaics at Pompeii." *AJA* 104,2:255-275.

Winckelmann, J.J. 1771. *Critical Account of the Situation and Destruction of Herculaneum, Pompeii, and Stabia*. London: T. Carnan and F. Newberry.

Woolfit, C. 2007. "Preventive conservation of ruins reconstruction, reburial and enclosure." In *Conservation of Ruins*, edited by J. Ashurst. 146-193. Oxford: Elvesier Ltd.

Wordsworth, J. 1874. *Fragments and Specimens of Early Latin*. Oxford: Clarendon Press.

Zanker, P. 1998. Pompeii: Public and Private Life. Translated by Deborah Lucas Schneider. Cambridge: Harvard University Press.

Zevi, F. (ed.). 1979. *Pompei 79: Raccolta di studi per il decimonono centinario dell'eruzione vesuviana*. Naples: Gaetano Macchiaroli Editore.

--------. 1998. *I mosaici della Casa del Fauno a Pompei*. Naples: L. Pedic.

BIOGRAPHICAL SKETCH

Kevin A. Wohlgemuth is a native of Thousand Oaks, California. He earned a Bachelor's degree from The University of Arizona, with a major in Classical Civilizations and a minor in Art History. While at The University of Arizona, he studied abroad in the Fall 2002 and Summer 2003 semesters at the Istituto Internazionale di Studi Classici di Orvieto in Orvieto, Italy.

During summer 2003, Kevin first excavated at Campo della Fiera outside Orvieto with the University of Arizona and the Università degli studi di Macerata. He continued excavating at Campo della Fiera through summer 2005 and also participated in a study season that year. In 2004, he served as a trench supervisor at the University of Arizona excavations at Chianciano del Terme, Italy. After beginning graduate school at Florida State University, Kevin served as a trench supervisor at the Cetamura del Chianti Archaeological Field School in Italy during the 2006 and 2007 archaeological seasons. Also, in 2006, he studied a group of local wares from Cetamura del Chianti and presented his findings at the 2006 Cetamura Symposium at Florida State University.

Kevin plans on pursuing a career in archaeological conservation in order to contribute to the preservation of the world's cultural and historical artifacts and monuments. During the 2008 spring semester, he interned at the State Conservation Lab of Florida and in summer 2008 he will train in archaeological conservation with the Poggio Civitate Excavation Project and return to excavate once more at Campo della Fiera.